

**EFFECTIVENESS OF HOME BASED STEAM INHALATION
THERAPY ON REDUCING THE SYMPTOMS OF ACUTE UPPER
RESPIRATORY TRACT INFECTIONS AMONG UNDER FIVE
CHILDREN IN NANCHIYAMPALAYAM AT
DHARAPURAM**

**A DISSERTATION SUBMITTED TO THE TAMILNADU DR. M.G.R.
MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE DEGREE
OF MASTER OF SCIENCE IN NURSING
2009 – 2011**

**A STUDY TO ASSESS THE EFFECTIVENESS OF HOME
BASED STEAM INHALATION THERAPY ON REDUCING THE
SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT
INFECTIONS AMONG UNDER FIVE
CHILDREN IN NANCHIYAMPALAYAM
AT DHARAPURAM**

APPROVED BY DESSERTATION COMMITTEE ON _____

RESEARCH GUIDE :-

Prof. Mrs. Vijayarani Prince,
M.Sc(N)., M.A., M.A., M.Phil(N).,
Principal,
Bishop's College of Nursing,
Dharapuram.

CLINICAL GUIDE:-

Mrs. Sheela Rani , M.Sc (N).,
Department of Community Health Nursing,
Bishop's College of Nursing,
Dharapuram.

MEDICAL EXPERT :-

Dr. Joseph.S, M.B.B.S., FSHM.,
Medical Superintendent,
C.S.I. Dr. Anne Booth Mission Hospital
Dharapuram.

Dr JOSEPH.S. M B B S
REG NO:86601

MEDICAL OFFICER
C.S.I. DR. ANNE BOOTH
MISSION HOSPITAL
DHARAPURAM

**A DISSERTATION SUBMITTED TO THE TAMILNADU DR. M.G.R.
MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE DEGREE
OF MASTER OF SCIENCE IN NURSING
2009 – 2011**

**A STUDY TO ASSESS THE EFFECTIVENESS OF HOME
BASED STEAM INHALATION THERAPY ON REDUCING THE
SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT
INFECTIONS AMONG UNDER FIVE
CHILDREN IN NANCHIYAMPALAYAM
AT DHARAPURAM**

**Certified Bonafide Project Work
Done By**

Ms. A. LYDIA JASMINE

**M.Sc., Nursing II Year
Bishop's College of Nursing
Dharapuram.**

Internal Examiner

External Examiner

COLLEGE SEAL

**A DISSERTATION SUBMITTED TO THE TAMILNADU
DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL
FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE
OF MASTER OF SCIENCE IN NURSING
2009 – 2011**

ACKNOWLEDGEMENT

I am whole heartedly grateful to the **God** almighty who strengthened, accompanied and blessed me throughout the study.

I extend my heart full thanks and gratitude to the **Management**, Bishop's College of Nursing for providing an opportunity to undergo this course to uplift my professional life.

With deep sense of gratitude, I express my sincere thanks to our beloved principal, **Prof. Vijayarani Prince, M.Sc(N), M.A., M.A., M.Phil(N), Bishop's college of Nursing** for her expert guidance, thoughts and comments, invaluable suggestions ,constant encouragement and support throughout the period of study.

I highly obligate to **Mr. John Wesley**, Administrator, Bishop's College of Nursing, Dharapuram for giving me an opportunity to undergo this project.

It gives me immense pleasure to thank with deep sense of gratitude to the clinical guide **Mrs. Sheela Rani, M.Sc (N),** Department of Community Health Nursing for her Valuable Suggestions, encouragement, constant support and prayers till the completion of the study.

I acknowledge my genuine gratitude to **Dr. Joseph.S, MBBS., FSHM., Medical Superintendent,** C.S.I. Dr. Anne Booth Mission Hospital, Dharapuram for his extensive guidance, treasured help and experts opinion in successful completion of the study.

I would like to extend my deepest gratitude to **Mrs. Glory Suramanjari, M.Sc(N).**, Associate Professor ,class co-ordinator, for her expert guidance, constant support and untiring efforts in the area of research kindled my spirit and enthusiasm to go ahead and to accomplish this study successfully.

I express my genuine gratitude and obligation to **DR.M.R.Duraisamy, Phd, Associate Prof. (Stat)** for his suggestions in analysis and presentation of data.

I extend my gratitude to **Mr.P.Sampath, M.A.,M.Ed., (English)** for his valuable English editing.

I extend my thanks to **Mr.D.M.Senthil Kumar; M.A.,B.Ed., (Tamil)** for his valuable Tamil editing.

I extend my thanks to the **Librarians.**, Bishop's College for Nursing for their co - operation in issuing books when needed.

I extend my special gratitude to **Mr.Vijay Kumar, Vijay Xerox,** for their patience, kind co-operation, understanding the needs to be incorporated in the study and timely completion of the manuscript.

TABLE OF CONTENT

CHAPTER	TITLE	PAGE NO
I	(i) INTRODUCTION	1-12
	➤ Background of the Study	1
	➤ Need for the study	4
	➤ Statement of the problem	9
	➤ Objectives of the study	9
	➤ Operational definitions	9
	➤ Hypotheses	11
	➤ Assumptions	11
	➤ Delimitations	12
	➤ Projected outcome	12
	(ii) CONCEPTUAL FRAMEWORK	13-18
II	REVIEW OF LITERATURE	19-26
	PART-I	
	☞ Over view of acute upper respiratory tract infections	20
	PART-II	
	☞ Studies related to acute upper respiratory tract infections	28
	i) Incidence of acute upper respiratory tract infection	28
	ii) Causes of acute upper respiratory tract infection	29

CHAPTER	TITLE	PAGE NO
III	iii) Signs and symptoms of acute upper respiratory tract infection	30
	iv) Diagnosis of acute upper respiratory tract infection	31
	v) Treatment of acute upper respiratory tract infection	32
	vi) Complication of acute upper respiratory tract infection	34
	☞ Studies related to steam inhalation therapy	35
	METHODOLOGY	37-44
	➤ Research approach	37
	➤ Research design	37
	➤ Setting of the study	38
	➤ Population	38
	➤ Sample	38
	➤ Criteria for sample selection	
	• Inclusion Criteria	38
	• Exclusion Criteria	38
	➤ Sample size	39
	➤ Sampling technique	39
	➤ Instrument	
	i) Description of the tool	39
	ii) Scoring procedure	40
	➤ Validity and reliability of the tool	41
	➤ Pilot study	41
	➤ Data collection Procedure	42

CHAPTER	TITLE	PAGE NO
	➤ Plan for data analysis	43
	➤ Protection of human subjects	44
IV	DATA ANALYSIS AND INTERPRETATION	45-60
V	DISCUSSION	61-65
VI	SUMMARY , CONCLUSION	66-70
	➤ IMPLICATIONS	68
	• Nursing service	69
	• Nursing education	69
	• Nursing administration	69
	• Nursing research	69
	➤ RECOMMENDATIONS	70
	➤ LIMITATIONS	70
VII	BIBLIOGRAPHY	71-76
	□ References	
VIII	APPENDICES	i - xxiii

LIST OF TABLES

Table No.	Title	Page No.
1	Frequency and percentage distribution of demographic variables of under five children with acute upper respiratory tract infection	46
2	Frequency and percentage distribution of the symptoms of acute upper respiratory tract infection among under five children before steam inhalation therapy	54
3	Frequency and percentage distribution of the symptoms of acute upper respiratory tract infection among under five children after steam inhalation therapy	55
4	Comparison of frequency and percentage distribution of the symptoms of acute upper respiratory tract infection among under five children before and after steam inhalation therapy	56
5	Comparison of mean, mean percentage, standard deviation, mean difference and 't' value of symptoms of acute upper respiratory tract infection among under five children before and after steam inhalation therapy.	58
6	Association between the symptoms of acute upper respiratory tract infection among under five children after steam inhalation therapy with their selected demographic variables	59

LIST OF FIGURES

FIGURE NO	TITLE	PAGE NO
1	Conceptual frame work	18
2	Percentage distribution of under five children with acute upper respiratory tract infection according to their age	48
3	Percentage distribution of under five children with acute upper respiratory tract infection according to their sex	49
4	Percentage distribution of under five children with acute upper respiratory tract infection according to their mode of delivery	50
5	Percentage distribution of under five children with acute upper respiratory tract infection according to type of family	51
6	Percentage distribution of under five children with acute upper respiratory tract infection according to monthly income per month	52
7	Percentage distribution of under five children with acute upper respiratory tract infection according to their past history of acute upper respiratory tract infection	53
8	Percentage distribution of symptoms of acute upper respiratory tract infection before and after steam inhalation therapy	57

LIST OF APPENDICES

APPENDIX	CONTENT	PAGE NO.
A	Letter seeking permission for conducting the study	i
B	Letter seeking experts opinion for validity of tools	ii
C	List of experts of validation	iii
D	Certificate for validity	iv
E	Certificate for English editing	ix
F	Certificate for Tamil editing	x
G	Nanchiyampalayam area map	xi
H	Questionnaire	
	English	xii
	Tamil	xv
I	Procedure for practicing home based steam inhalation therapy	xix
J	Photos	xxi

ABSTRACT

Acute upper respiratory infections (AURIs) continue to be the leading cause of acute illness worldwide and remain the most important cause of infant and young children mortality, accounting for about 2 million deaths each year, and ranking first among causes of disability – adjusted life – years (DALYs) lost in developing countries (94.6 millions, 6.3% of total). The populations most at risk for developing a fatal respiratory disease are the very young children. Upper respiratory infections (URIs) are very frequent but seldom life – threatening. The incidence of ARIs in children aged less than 5 years is estimated to be 0.29 and 0.05 child – year in developing and industrialized countries, respectively, which translates into 5 million new episodes each year, respectively.

Although advice to use steam is very commonly given in primary care, there is only preliminary evidence from a review that steam may provide some symptomatic benefit in upper respiratory tract infection.

This study was aimed to assess the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infections among under five children in Nanchiyampalayam at Dharapuram.

The conceptual framework of the study was based on the Modified Wiedenbach's Helping Art Of Clinical Nursing Theory (1964). The study made use of one group pretest post test pre experimental design. Purposive sampling technique was used to select 30 samples for the study. The tool used for the study was observation checklist and rating scale. The pretest was conducted and the steam inhalation was

given in the morning and evening for five days. The post test was done on the 6th day using the same observational checklist and rating scale. The data gathered was analyzed by using descriptive and inferential statistics. There is a significant difference between pretest and post test score ('t' value = 23.20). Statistical analysis showed that the steam inhalation in post test was highly significant at $P < 0.05$ level. It is strongly supported that the steam inhalation was effective in reducing the symptoms of acute upper respiratory tract infection. The study findings revealed that there was a significant reduction in symptoms level followed by steam inhalation therapy among under five children with acute upper respiratory tract infection.

Chapter - I

Chapter - II

Chapter - III

Chapter - IV

Chapter - V

Chapter - VI

References

Appendices

CHAPTER - I

INTRODUCTION

"He who breaths most air lives most life"

Elizabeth Barret Browning

BACKGROUND OF THE STUDY

Infections of the respiratory tract are perhaps the most common human ailment. While they are a source of discomfort disability and loss of time for most adults, they are a substantial cause of morbidity in young children and the elderly. Many of these infections run their natural course in older children and in adults without specific treatment

and without complications. However, in young infants, small children and in the elderly, or in persons with impaired respiratory tract reserves, it increases the morbidity and mortality rates.

Acute respiratory tract infections (ARI) may cause inflammation of the respiratory tract anywhere from nose to alveoli, with a wide range of combination of symptoms and signs. ARI is often classified by clinical syndromes depending on the site of infection and is referred to as ARI of upper (AURI) or lower (ALRI) respiratory tract. The upper respiratory tract infections include common cold, pharyngitis and otitis media.

Park K.,(2009)

Acute upper respiratory infections (AURI) are the major causes of morbidity and mortality in children world wide, particularly in developing countries. The incidence of acute sinusitis varies from 15 to 43 episodes per thousand patients per year.

Stalman W.,(1997)

Gupta N. et. al.,(2007) conducted a study in urban slum area – “Gokul Puri” in Delhi, among under five children with the aim to assess the magnitudes of AURI. The study result revealed 191(14.6%) of 1307 children surveyed, had an attack of AURI cases were mild running nose 78%, cough 76.4% and / or fever 45.5%. Only 8(4%) had fast breathing. One or more danger sings were known to 80% of mothers, and an equal number 80% of mothers had sought treatment. AURIs are mostly mild or self limiting but only 16% of caretakers perceived so, and doctors also prescribed medicines.

The symptoms of acute upper respiratory tract infection include nasal discharge; nasal obstruction usually is low grade fever, malaise, sneezing and nasal secretions which can become purulent. Symptoms of sore throat accompany pharyngitis or erythema, exudates or ulceration in the pharynx and symptoms of common cold.

Jain N.,(2000)

The clinical features of AURI are rhinorrhoea, nasal stuffiness, cough, sore throat, earache, malaise, restless, irritability and occasionally vomiting, onset of fever from 39 to 40 degree celsius, which lasts from few hours to 3 days, irritability, restless, nasal discharge, vomiting and nasal obstruction causes difficulty in sucking and breathing in infants.

Jessi C.M.,(1997)

Steam inhalation is defined as the taking air or other vapors into lungs through mouth or nose. The liquid is converted into vapors. It may be simple normal saline. It is used for local effect. The inhalation of plain steam is known as the utilization of moist heat to loosen lung congestion and helps to liquefy secretions.

Laur L.,(2009)

Steam inhalation may have local effect. Steam introduced into the deeper passages of the respiratory track provides a large surface area for absorption. The alveolar capillary network readily absorbs gases and mists introduced into the lungs. Airways must not interfere with the normal gas exchange such as constricting bronchiole.

Basavanthapa B.T.,(2004)

Every year some 12 million children in developing countries die before they reach their fifth birthday, many during the first year of life. Seven in ten of these deaths are due to acute respiratory infections. Acute upper respiratory infections (AURI) continue to be major scourges in childhood. Globally, acute upper respiratory tract infections (AURI) constitute 19% of mortality respectively in this age group. Therefore, United Nations millennium development goals (MDGS) are committed to the two – third reduction of childhood mortality by 2015 from 1990 levels. The child mortality is declining steadily over the past few decades.

Gupta N.,(2007)

Many risk factors for acute upper respiratory tract infections have been identified. They include not only the climatic conditions but also the housing, level of industrialization and socio – economic development. In developing countries, overcrowded dwellings, poor nutrition, low birth weight and intense indoor smoke pollution underline the high rates.

Park K.,(2009)

Nurses may also encounter patients with URIs in the community setting or in long-term facilities. Nurses need to be able to recognize the signs and symptoms of URIs to provide appropriate care.

WHO.,(1997)

NEED FOR THE STUDY

Every year AURI in young children is responsible for an estimated 3.9 million deaths world wide. It is estimated that Bangladesh, India, Indonesia, and Nepal together account for 40 percent of the AURI, is similar in developed and developing countries. This

difference is due to high prevalence of malnutrition, low birth weight and indoor air pollution in developing countries.

AURI is an important cause of morbidity in children. On an average, children below 5 years of age suffer about 5 episodes of AURI per child per year, thus accounting for about 238 million attacks. Although most of the attacks are mild and self limiting episodes, AURI is responsible for about 30 – 50 per cent of visits to health facilities and for about 20 – 40 per cent of admissions to hospitals. It is also a leading cause of disabilities including deafness as a sequelae of otitis media.

Park K.,(2009)

Mouro A. et. al.,(2010) conducted a study on prevalence of upper respiratory tract infections according to the age at a tertiary care hospital in the city of Sao Paulo. Results showed that most frequently found etiological agents detected per age groups were: respiratory syncytial virus (25.34%; 184/726) in patients aged 28 days-3 years; S. pyogenes (9.5%; 70/740) in 3-12 year-old children; influenza virus (8.8%; 64/726) in adults (18 – 59 years).

Symekher S.M.L. et.al.,(2008) conducted a cross sectional study on prevalence of viral aetiologies in children with acute respiratory infections in Nairobi, Kenya. Throat swabs were collected from patients. A total of 388 children (age range = 1 – 132 months) were recruited. Results showed that 26% (101) had upper (URTI) while 74% (287) had lower (LRTI) respiratory tract infections. There were 177 (45.6%) viruses isolated; adenovirus (27; 7%), parainfluenza (25; 6.4%), influenza (20; 5.2%), respiratory syncytial virus (19; 4.9%) and unidentified viruses (86; 22.2%). Majority of the viruses were isolated from patients with LRTI (110; 28.4%) while URTI had 67 (17.3%) isolates.

Taylor.,(1992) Children get more cough and cold than adults. The frequency decreases with age as the immune system develops. Estimates reported in the Lancet suggest that on average children under 1 year in the UK get about 6 colds a year, children 1-2 years get 5.7, 3 – 4 year olds get 4.5 and 5 – 9 years old get 3.5 cold per year, between 6 – 8 coughs in a year with the number diminishing around 6 years.

Zaman K et. al.,(2008) conducted a community – based longitudinal study in rural Bangladeshi investigated the association between nutritional status, cell mediated immune status and acute upper respiratory infections (URI). A total of 696 children aged 0 – 59 months was followed prospectively for 1 year yielding 183865 child days' observation. Trained field workers visited each child every 4th day and collected morbidity data on symptoms suggesting URI (cough, fever, nasal discharge) for the preceding 3 days by recall. On the day of visit they examined each child reporting cough and/or fever to record the temperature, presence of nasal discharge, rate of respiration and presence of chest indrawing. Anthropometry for all children was conducted monthly. Cell mediated immune competence was assessed by a multiple antigen skin test at base line and there after every 3 months. The incidence of URI was 5.3 episodes per child – year observed. Approximately three quarters of the study children were bellow -2 Z- score weight for age and height for age, and a quarter below -2 Z- score weight for height. During different test periods 9 – 21% of the study children did not respond to any of the test antigens. In a regression module children < -2 Z- score for weight for height had 16% [odds ratio (or) 1.16, 95% confidence interval (CI) 1.03 – 1.31, P=0.01] higher risk for developing URI. Anergic children had 20% that

wasting and depressed cell – mediated immunity (CMI), but not stunting, were associated with the incidence of URI among rural Bangladeshi children.

In India, in the states and districts with high infant and child mortality rates, AURI is also one of the major reasons for which children are brought to the hospitals and health facilities. Hospital records from states with high infant mortality rates show that upto 13% of inpatient deaths in pediatric wards are due to AURI. The proportion of death to AURI in the community is much higher as many children die at home. The reason for high cause facility may be that children are either not brought to the hospitals or brought too late.

According to **WHO** estimates, respiratory infections caused about 987, 000 deaths in India, of which 969,000 were due to acute lower respiratory infections (ALRI) 10,000 due to acute upper respiratory infections (AURI), and about 9000 due to otitis media. The burden of

disease in terms of these 24.8 million was due to ALRI and 4.75 lakhs due to otitis media.

Park K.,(2009)

According to **ICMR Bulletin.,(2003)** Health status of primitive tribes of Orissa; the acute upper respiratory tract infection was more commonly prevalent (14.9 in Bondo and 8.3 percent in Juanga) and accounts for a high in infant mortality due to inadequate treatment, lack of early diagnosis and prevention. Similar observations were made in Birhor (11.2%) and Sahira (57.5% in children aged 0 – 4 years and 56.9% in children aged 5 – 14 years) tribes of Madhya Pradesh.

Venkatarao T.,(1996) had conducted a study on effect of vitamin A supplementation to mother and infant on morbidity in infancy. The study design used was randomized double blind placebo controlled field trial. 909 newly delivered mother-and-infant pairs of 51 villages in two contiguous Primary health Centers in Villupuram Health Unit District of Tamil Nadu, South India. Results showed that the incidences of AURI were 96.6%, 95.6% and 91.1%, means were 4.8, 5.1 and, 4.8 episodes, and the medians were 32, 34 and 34 days, respectively.

Breathing in steam from a bowl or jug is widely believed to ease the soreness and discomfort of throat. It is a cheap and safe treatment for patients who find it helpful.

Mossad B. S.,(1998)

Frostall G. J. et. al.,(1994) conducted a study on effect to inhaling heated vapor on symptoms of the common cold evaluated subjective symptoms scores for nasal resistance. Members of both treatment and placebo groups said that the treatment helped ($P = 0.42$).

Steam inhalation with Tulsi leaves twice daily i.e. early in the morning before break fast and at bed time with improvised inhaler from news paper cone over the top of the tea kettle. The study proved that steam inhalation was effective.

Vijaya.,(1991)

The investigator had noticed that the number of the under five children affected with acute upper respiratory tract infection is more than the adults who visit the primary health center and community health center. During the home visit the investigator had also directly seen the difficulties and the burdens that the parents of under five children who are affected with acute upper respiratory tract infection are facing problems both physically and emotionally. The parents say that most of the family's income is spent for the treatment of acute upper respiratory tract infection. Based on the observations made on AURI among under five, the investigator felt the need of assessing the effectiveness of steam inhalation therapy in home environment which is the common and cheap home remedies for acute upper respiratory tract infection.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infections among under five children in Nanchiyampalayam at Dharapuram.

OBJECTIVES

1. To assess the symptoms of acute upper respiratory tract infection among under five children before steam inhalation therapy
2. To assess the symptoms of acute upper respiratory tract infection among under five children after steam inhalation therapy.
3. To compare the symptoms of acute upper respiratory tract infection among under five children before and after steam inhalation therapy.
4. To find out the association between the symptoms of acute upper respiratory tract infection among under five children after steam inhalation therapy with their selected demographic variables.

OPERATIONAL DEFINITIONS

Effectiveness

It means producing an intended result.

Soanes C.,(2001)

In this study it refers to determine the extent to which home based steam inhalation therapy has reduced the symptoms of acute upper respiratory tract infection which is measured by using statistical measures.

Home based

Use something in a place where one lives.

Soanes C.,(2001)

In this study the steam inhalation therapy is given in the home setting.

Steam inhalation therapy

Breathing warm and moist air produced by a vaporizer is called steam / moist inhalation.

Nancy.,(1996)

In this study plain water steam inhalation therapy is given.

Home based steam inhalation therapy

The drawing of air or other substances or steam into the lungs by the nasal or oral respiratory route in the home setting. In this study plain water steam inhalation is used in the home settings. The steam inhalation is given with the available vessels in the participant's home. The home based steam inhalation is given for 15 – 20 minutes in the morning and evening for five days.

Acute upper respiratory tract infection

It is a nonspecific term used to describe acute infections involving the nose, para nasal sinuses, pharynx, larynx, trachea and bronchi.

Mossad S. B.,(1998)

In this study it refers to under five children with acute infections in the nose, para nasal sinuses, pharynx, and larynx.

Symptoms of acute upper respiratory tract infection

Any indication of disease perceived by the patient.

Weller F. B.,(2007)

In this study the symptoms include rhinnorrhoea, nasal obstruction, cough, sore throat, fever, earache, vomiting, restlessness, irritable cry which will be measured by the observational check list and rating scale. The symptoms will be collected by the verbal response of the mother.

Under five children

Children between the age group of 1 - 5 years. In this study the under five children are within the age group of 2-5 years.

HYPOTHESES

- H₁** : The mean post test scores is significantly lower than the mean pre test scores of symptoms among under five children with acute upper respiratory tract infection.
- H₂** : There will be a significant association between the post test scores of symptoms among under five children with acute upper respiratory tract infection with their selected demographic variables.

ASSUMPTIONS

- ❖ Home based steam inhalation may reduce the symptoms of acute upper respiratory tract infection.
- ❖ Home based steam inhalation therapy helps to reduce the hospitalization.
- ❖ Community health nurse has the responsibility in educating the mothers of under five children regarding home based steam inhalation in reducing the symptoms of acute upper respiratory tract infection.

DELIMITATIONS

- The sample size was delimited to 30.
- The data collection period was limited to 5 weeks.

PROJECTED OUTCOME

The under five children will be relieved from the acute upper respiratory tract infections and there by the under five children's feeding level and activity level will be improved. The symptoms of acute upper respiratory tract infection will be reduced by giving steam inhalation which will help in reducing the duration, severity, medications, hospitalization and also in preventing complications.

(ii) CONCEPTUAL FRAMEWORK

Conceptual framework refers to concepts that offer a framework of proposition for conducting research.

“**Kerlinger** views theories as a set of interrelated concepts that give a systematic view of a phenomenon that is explanatory and predictive in nature”.

The present study was aimed at reducing the symptoms of acute upper respiratory infection among under five children by giving steam inhalation, and the present study was based on **Modified Weidenbach’s Helping Art Of Clinical Nursing Theory (1964)**.

According to the theory, the practice of nursing comprises of a wide variety of services, each directed towards the attainment of one of its three components.

- Identifying a need for help.
- Ministering needed help; and
- Validating that the need for help was met.

Theory may be described as a system of conceptualizations invented for some purpose. Perspective theory (a situation producing theory) may be described as one that conceptualizing both a desired situation and the prescription by which it is brought about. Thus a perspective theory directs actions towards an explicit goal. Weidenbach’s perspective theory was made up of three steps.

STEP - I

IDENTIFYING A NEED FOR HELP

In the first step of identification of patient's need for help, there are 3 components involved.

❖ General Information

Weidenbach proposes a perspective theory for nursing, which is described as a conceiving of a desired situation and the ways to attain it. It directs action towards an explicit goal.

In this study it refers to the home based steam inhalation therapy will reduce the symptoms of acute upper respiratory tract infection among under five children.

❖ The Central Purpose

According to the theory the central purpose refers to what the nurse wants to accomplish. It is the over all plan towards which a nurse strives; it transcends the immediate intent of the assignment or task by specifically directing activities towards the patients good.

In this study the central purpose refers to reduce the symptoms of acute upper respiratory infection among under five children.

❖ The Prescription

According to the theory says a prescription refers to the plan of care for a patient. It specifies the nature of action that will fulfill the nurse's central purpose and the rationale for that action.

In this study the prescription for the fulfillment of the central purpose was steam inhalation. The study will be conducted for five weeks in Nanchiyampalayam at Dharapuram. Written permission will be obtained from the municipal commissioner, Dharapuram and oral consent will be obtained from the mothers of under five children after explaining the purpose of the study. 30 participants will be selected by using purposive sampling method. Pre test will be conducted for the under five children by assessing the symptoms of acute upper respiratory tract infection by using the observation check list and rating scale. The steam inhalation using plain water will be demonstrated to the mother and the under five children will be given inhalation for 15 – 20 minutes. Mother will be instructed to repeat the steam inhalation in the morning and evening also under the supervision of investigator. The home based steam inhalation will be given for 5 days. On the 6th day to find out the effectiveness of home based steam inhalation, the under five children will be assessed for the symptoms of acute respiratory infection using the same observation check list and rating scale.

STEP – II

MINISTERING THE NEEDED HELP

Realities

Realities refer to the physical, physiologic, emotional and spiritual factors that come into play in a situation involving nursing actions. Weidenbach defines the five realities as agent, recipient, goal, means, and framework.

The **agent** who is the practicing nurse or her delegate characterized by personal attributes, problems, capacities, and commitment and competence to provide nursing care.

In this study it refers to the researcher.

The **recipient** is the patient who is characterized by personal attributes, problems, capacities, aspirations and ability to cope with the concerns or problems being experienced.

In this study the under five children with acute upper respiratory tract infection was the recipient.

The **goal** is the desired outcome the nurse wishes to achieve.

In this study it refers to the reduction of symptoms among under five children with acute upper respiratory tract infection.

The **means** comprise the activities and devices through which the practitioner is enabled to attain her goal. The means include skills, techniques, procedures and devices that may be used to facilitate nursing practice.

In this study the steam inhalation therapy was administered morning and evening for 5 days using plain water in the home setting to attain the goal (reduce the symptoms of acute upper respiratory tract infection).

The **frame work** consists of the human, environment, professional and organizational facilities that not only make up the context within which nursing is practiced but also constitute its currently existing limits.

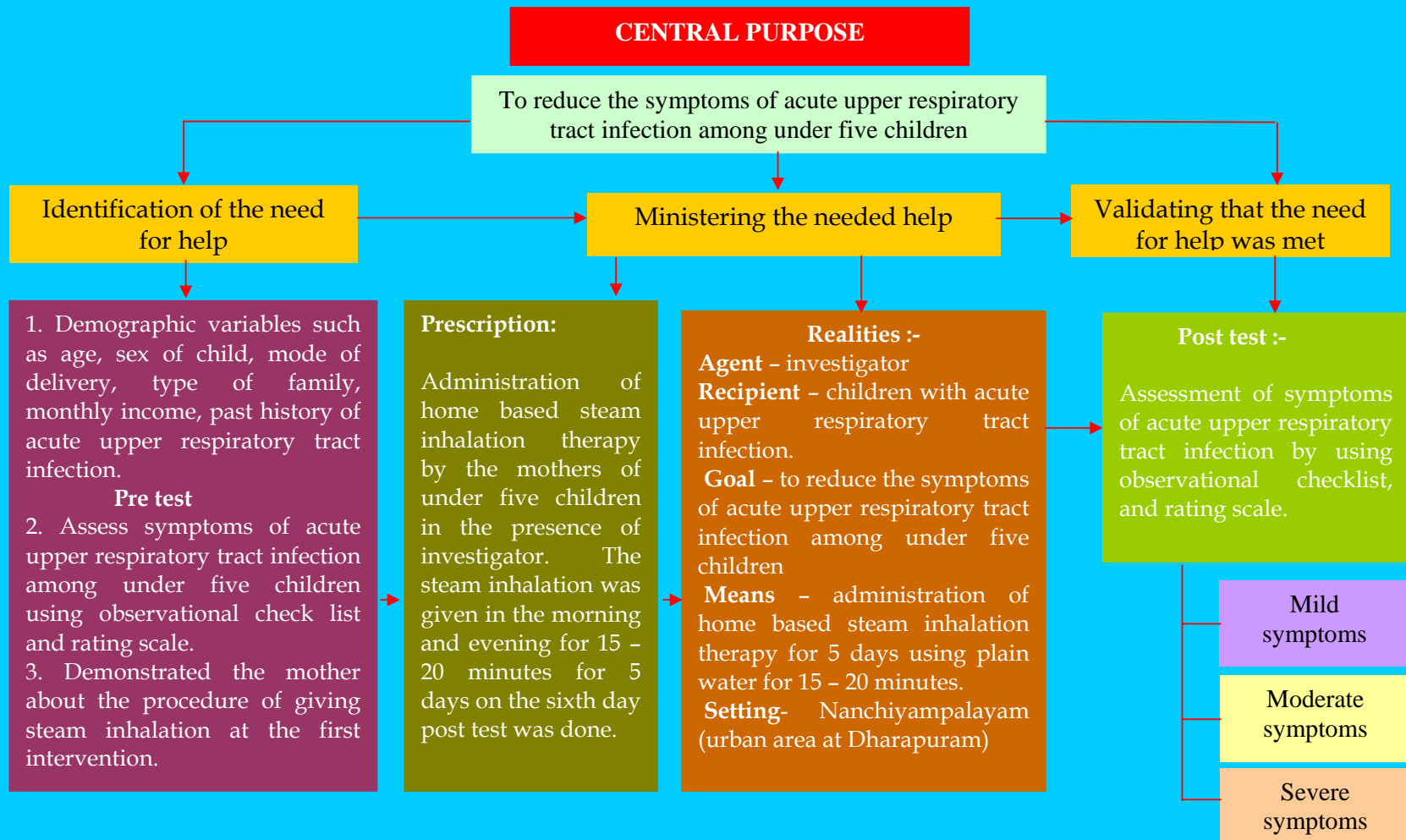
In this study the under five children are selected from the urban area of Dharapuram and steam inhalation was given in their home set up.

STEP - III

VALIDATING THAT THE NEED FOR HELP WAS MET

Includes validating the needed help that was delivered in achieving the central purpose. It refers to a collection of evidence that shows patients need have been met and that his functional ability has been restored as a direct result of the nurses actions .It is based on patients-oriented evidence. This step involves the post assessment done after ministering the help and analysis to infer the outcome.

In this study the symptoms of acute upper respiratory tract infection was assessed after steam inhalation therapy using the observational checklist and rating scale. If the child has moderate to severe symptoms in post test, the mother is advised to seek the physician for further treatment.



CONCEPTUAL FRAMEWORK

Fig: 1 MODIFIED WIEDENBACH'S HELPING ART OF CLINICAL NURSING THEORY (1964)

CHAPTER - II

REVIEW OF LITERATURE

The review of literature for the present study has been done from published articles, text books, reports and medline search.

The review of literature has been organized under the following headings.

PART - I:

↻ Overview of acute upper respiratory tract infections

PART - II:

↻ Studies related to acute upper respiratory tract infections

Incidence of acute upper respiratory tract infection.

Causes of acute upper respiratory tract infection.

Signs and symptoms of acute upper respiratory tract infection.

Diagnosis of acute upper respiratory tract infection.

Treatment of acute upper respiratory tract infection.

Complications of acute upper respiratory tract infection.

↻ Studies related to steam inhalation therapy

PART - I

OVERVIEW OF ACUTE UPPER RESPIRATORY TRACT INFECTIONS

Most children have about 4 – 6 acute respiratory infections each year. Children with respiratory infections account for a large proportion of patients seen by health workers in centres these infections tend to be even more frequent in urban communities than in rural areas.

WHO.,(1997)

DEFINITION

Upper respiratory tract infection refers to the infections in any area of respiratory tract, including the nose, middle ear, throat (pharynx), voice box (larynx).

WHO.,(1997)

EPIDEMIOLOGICAL DATA

Epidemiological data concludes that upper respiratory tract illness accounts annually for at least 20 million absences from work and 22 million absences from school.

Daniels R. et. al.,(2007)

RISK FACTORS

Many risk factors for respiratory tract infections have been identified. They include not only the climatic conditions but also the housing, level of industrialization and socio-economic development. In developing countries, over crowded dwellings, poor nutrition, low birth weight and intense indoor smoke pollution underline the high rates. Studies in developed countries have shown that a higher rate of infection is common in younger sibling of school going children who

introduce infection into the household. Children from low socio-economic status tend to have more respiratory infections. The infection is more common in preschool children attending day-care centers. The rural infections tend to become more common in urban communities than in rural communities.

Park K.,(2009)

ETIOLOGY

Most acute upper respiratory tract infections are caused by viruses and mycoplasma. An exception is acute epiglottitis. Streptococci and the diphtheria organisms are the major bacterial agents capable of causing primary pharyngeal disease; even in cases of acute tonsillopharyngitis, most illness is of non – bacterial origin. Although considerable overlapping exists some microorganisms are more likely to produce a given respiratory syndrome than others, and certain agents have a greater tendency than others to produce severe disease. The respiratory syncytial virus (RSV), parainfluenza viruses, influenza viruses, adenoviruses, rhinoviruses, coronaviruses, coxsackieviruses A and B are the agents causing upper respiratory tract infection.

Nelson.,(1996)

Respiratory infections account for the majority of acute illness in children. The etiology and course of these infections are influenced by the age of the child, season, living conditions and preexisting medical problems.

Wong D. L.,(2006)

The upper respiratory tract infections are caused by common bacterial agents causing sinusitis are *S.pneumoniae*, *H.influenzae*, *M.catarrhalis*, *S.aureus* and *S.pyogenes*.

Jain N., Lodha R., and Kabra S. K. et. al.,(2001)

PATHOPHYSIOLOGY AND NATURAL HISTORY

Transmissions of organisms causing URIs occur by aerosol, droplet, or direct hand-to-hand contact with infected secretions with subsequent passage to the nares or eyes. Thus transmission occurs more commonly in crowded conditions. Direct invasion of the respiratory epithelium results in symptoms corresponding to the area(s) involved. Sinusitis and acute bronchitis are frequently preceded by a common cold. Sinonasal allergies, anatomic abnormalities such as deviated nasal septum, sinus ostial blockade caused by mucosal edema, immune deficiency disorders. Immediately after the virus enters the body, it causes a reaction – the body's immune to react to the foreign virus. This in turn, causes:

- ❖ thin mucus production (a runny nose).
- ❖ making hard to breath and congestion.
- ❖ form irritation in the nose.
- ❖ increased mucus dripping down the throat.

Mossad S. B.,(1998)

CLINICAL MANIFESTATIONS

Acute upper respiratory tract infections are characterized by fever, cough, sneezing and runny nose. There may be sore throat, headache, body aches. Nasal congestion leads to blockage of the nose.

Children become miserable due to blockage of nose because it interferes with their sleep and feeding behavior. There may be irritability and restlessness due to fever, body aches and nose block.

Clement.I.,(2006)

In nasopharyngitis the child develops nasal congestion and discharge (rhinorrhea), which is typically thin and clear but which may become thick and yellow (mucopurulent). There may be no other symptoms, but many children have fever (usually low grade), anorexia and decreased activity.

In streptococcal pharyngitis nausea, vomiting and abdominal pain are common, occurring in children more frequently.

Basavanthappa. B.T.,(2006)

The manifestations of tonsillitis are caused by inflammation. As the palatine tonsils enlarge from edema, they may meet in the midline (kissing tonsils), obstructing the passage of air and food. The child has difficulty in swallowing and breathing so the child breaths through the mouth.

In acute laryngitis, viruses are usual causative agents, and the principal complaint is hoarseness, which may be accompanied by other upper respiratory symptoms.

Hockenberry M. J. and Wilson D.,(2000)

DIAGNOSTIC EVALATION

80% to 90% of all cases of acute pharyngitis are viral, a throat culture should be performed to rule out GABHS. For acute purulent sinusitis Roentgenography is often used. The most common diagnostic findings are air-fluid levels and complete opacification. CT scans are sensitive indicators of sinus disease.

Nelson.,(1996)

Physical examination reveals tenderness over the affected sinus. Examination of the nose shows mucus or pus on the floor of the nasal cavity, often far back in the nose. X-ray shows opacification of the affected sinus or the group of sinuses.

Achar's.,(2000)

TREATMENT

Medical Management

Common cold is treated with antipyretics prescribed for mild fever discomfort. Decongestants and cough suppressants may be prescribed. Oral penicillin is prescribed for acute streptococcal pharyngitis. Orally administered erythromycin is indicated for children allergic to penicillin. Antibiotics are given for tonsillitis.

Hockenberry M. J. and Wilson D.,(2000)

Nursing Management

- ❖ Rest is recommended until the child is free of fever for at least 1 day.
- ❖ Increased fluid intake to thin respiratory secretions.
- ❖ Warm saline gargles and steam inhalation provide temporary relief of throat symptoms.

Hockenberry M. J. and Wilson D .,(2000)

Surgical Management

Patients with complications of URIs, such as peritonsillar abscess, or mastoiditis, and those with sinusitis refractory to medical treatment should be referred to an ear, nose and throat surgeon.

PREVENTION

Attempts should be made to protect children from contact with potentially infected person. Frequent hand washing remains the most important preventive measure for most URIs. Simple measures, such as covering the mouth and nose while sneezing, can decrease the risk of transmission of infectious agents.

Mossad S. B.,(1998)

COMPLICATIONS

Patients with rhinitis are at risk for sinusitis, otitis media, nasal speech, epistaxis and laryngeal edema. Sinusitis may lead to the complications like periorbital cellulitis, subperiosteal abscess, cavernous sinus thrombosis, dental abscess, meningitis and encephalitis. Complications of acute pharyngitis include peritonsillar cellulitis, peritonsillar abscess, retropharyngeal abscess, parapharyngeal abscess,

otitis media, sinusitis, mastoiditis, intracranial venous sinus thrombosis and pneumonia.

Daniels R. et. al.,(2007)

STEAM INHALATION THERAPY

DEFINITION

Steam inhalation is an application of moist heat to the respiratory passage and may be plain or medicated. Inhalation may be for a long period or given for a short time at specific intervals.

Trained Nurses Association of India.,(2005)

PURPOSES

- ❖ To relieve the inflammation and congestion of the mucus membranes of the respiratory and paranasal sinuses; to produce symptomatic relief in acute cold and sinusitis.
- ❖ To soften thick, tenacious mucus and help its expulsion from respiratory tract, to relieve cough in bronchitis.
- ❖ To provide heat and moisture and to prevent the dryness of the mucus membranes of the lungs and upper respiratory passages.
- ❖ To relieve spastic conditions of the larynx and bronchi.
- ❖ To provide antiseptic action on the respiratory tract.
- ❖ To relieve cough.

Lakhwinder et. al.,(2009)

INDICATIONS

- ★ Sinusitis
- ★ Oedema of the larynx
- ★ Thick mucous in chest
- ★ Acute bronchitis
- ★ Whooping cough
- ★ After tracheostomy
- ★ Spasm of the mucous membrane of the larynx

CONTRA-INDICATIONS

Steam inhalation is contra-indicated for the following persons:

- ✓ Carcinoma of lung patients.
- ✓ High fever patients.
- ✓ Patients with severe headache.

Trained Nurses Association of India.,(2005)

GENERAL INSTRUCTION

- ✓ Check the general condition and diagnosis of the patient.
- ✓ Explain the procedure to the patient before the preparation of the inhaler.
- ✓ Ask the patient to empty the bladder to ensure that they will remain on bed for some time after steam inhalation.
- ✓ When the drugs are used for inhalation, instruct the patient to close the eyes to prevent the drug irritating the conjunctiva.
- ✓ The temperature of water should remain between 120 and 160⁰ F or 54.5 – 76.7⁰ C.
- ✓ Effective steam inhalation should be at least for 15 to 20 minutes.

Trained Nurses Association of India.,(2005)

PART - II

STUDIES RELATED TO ACUTE UPPER RESPIRATORY TRACT INFECTION

i) Studies related to incidence of acute upper respiratory tract infection

Revai K. et. al.,(2007) conducted a study to find the incidence of sinusitis complicating upper respiratory tract infection in Galveston. The results showed that children in the 6 to 11 month old and 12 to 23 – month old age groups had the same incidence of URI (0.51 episodes per patient month). Children in the third year of life had 0.48 URI episodes per patient month. Children who attended day care had a URI rate of 0.59 URI episodes per patient / month, compared with 0.47 URI episodes per patient / month in children who did not attend day care (RR:1.2; 95%) confidence interval (CI: 1.1 – 1.4; P=0.1). Sinusitis complicated URI in 7%, 10% and 7% of episodes in children from 6 to 11, 12 to 23 and 24 to 35 months, respectively.

Kwong K. L. et. al.,(2009) conducted a study on influenza- related hospitalizations in children. This was a retrospective study carried out in a regional hospital in Hong Kong. Results showed that influenza, an infection accounted for 93.5% of these hospitalizations. Children less than 5 years of age comprised 70% of admission. Highest rate of admission occurred in May and April. One fourth of emergency admission during the study period and over 70% in the peak reason was a result of influenza – related illness. Underlying medical disease was observed in 14.6% of children. Mean duration of hospitalization was 3 days. Fever was the commonest presenting symptoms. Fever lasting for 7 days or more was observed in one-fifth of patients. Respiratory tract diseases (upper and lower) were the most frequent

non-micro logical diagnosis. Febrile convulsion was the complication observed in 27.6% of admission.

ii) Studies related to causes of acute upper respiratory tract infection.

Yeolekar L.R. et. al.,(May, 2008) conducted a study to study the circulation pattern of respiratory viruses in out patient department (OPD) and hospitalized children with acute respiratory tract infection in Western India. Nasopharyngeal aspirates were collected from 385 children with acute respiratory tract infections attending the OPD (n=199, 51.7%) and admitted to pediatric ward (n=186, 43.2%). Specimens were screened for seven respiratory viruses by immuno flouresence test (IFT) using Respiratory panel, screening and identification kit. The results shows viral antigen were detected in 57(28.6%) and 86 (46.2%) patients from OPD and admitted cases respectively, give an overall positivity of 143 (37.1%) for respiratory viruses. Of the six respiratory virsues, the most common was respiratory syncytial virus (RSV) in 100 (26%) patients, followed by influenza viruses 21 (5.4%), parainfluenza in 8 (2.07%), adenovirus in 3 (0.8%). One patient had mixed infection of RSV and adenovirus. RSV was most frequently detected in the hospitalized children (39.8%). They concluded as RSV appeared to be the most common respiratory viral infection in the age group 0 – 1 year causing hospitalization.

iii) Studies related to signs and symptoms of acute upper respiratory tract infection.

Chawes B. L. K., Miller E.K. and Bisgaard H., conducted a study on objective assessment of allergic and non allergic rhinitis in young children at Denmark. The methods used was prospective study on asthma in childhood birth cohort assessing rhinitis history. The results showed that allergic rhinitis was significantly and directly associated with irreversible nasal airway obstruction (reduced decongested nasal airway patency) ($P=0.004$), whereas non allergic rhinitis was not. Both allergic rhinitis ($P=0.000$) and non allergic rhinitis ($P=0.014$) were directly and significantly associated with nasal eosinophilia, but this association was stronger for allergic rhinitis.

Silvennoinen et. al.,(2009) had conducted a study on clinical presentation of influenza in unselected children treated as outpatients. The Method used was the clinical presentations of influenza in a prospective study of respiratory infections in prevent rolled cohorts of children -13 years of age. Results showed that influenza was virologically confirmed in 372 children, of whom 353(95%) provided complete data on the signs and symptoms were included in the analysis. A total of 95% of these children were febrile, and 50% had fever= 39.0°C . Among children < 3 years of age, 20% had fever = 40.0°C , seventy - seven percent of the children had cough, and 78% had rhinitis. In children 7 to 13 years of age, only 39% had headache and 13% had myalgia.

iv) Studies related to diagnosis of acute upper respiratory tract infection.

Gouarin S. et. al.,(2008) conducted a study on influenza C. Virus infection in France. 18 samples were selected using a combined tissue culture /RT – PCR diagnostic method. The results showed thirteen of the 18 infected patients were hospitalized, 3 presented with a severe lower respiratory infection. These results show that influenza C Virus regularly circulates in and generally causes a mild upper respiratory infection.

Lau J., Ioannidis J. P. and Wald E. R.,(2000) had conducted a study on supplement Diagnosis and Treatment of uncomplicated acute sinusitis in children at Boston. Both randomized and non randomized controlled trials were included to assess treatment efficacy. Of 1,857 citations reviewed, the authors identified 21 qualifying studies compared with 450 reports on complications of acute sinusitis and 233 non systematic reviews of the subject, which did not qualify for inclusion. The qualifying studies included five randomized trials and eight case series on antibiotic therapy, three randomized trials on ancillary treatments, and eight studies with information on diagnostic tests. The results revealed that improvement rate with antibiotics was 87.6 percent (177/202) in randomized trials and 92.9 percent (318/345) in non randomized studies ($p=0.08$). The respective improvement rates without antibiotics were 60 percent and 80 percent. Improvement rates were significantly higher in non randomized studies (Odds ratio, 1.79, 95 percent confidence interval (CI, 1.05 – 3.04).

v) Studies related to treatment of acute upper respiratory tract infection.

Li J. et. al.,(2009) conducted a study on Antimicrobial prescribing for upper respiratory infected and its effect on return visits in Oregon. It was a descriptive study. The results showed that the proportion of patients receiving antibiotics for bronchitis and sinusitis decreased from 70% to 61% and from 78% to 74% respectively, while antibiotic prescribing for AOM, URI and pharyngitis changed little. After controlling for age, gender, race/ethnicity, Medicaid plan type and location, it determined that patients who had received antibiotics during the index visit for AOM, URI and pharyngitis were more likely to return with a respiratory tract infection during the subsequent 30 days than patients who did not receive antibiotics.

Tamim H. et. al.,(2009) conducted a prospective study on Antibiotics misuse among infants with upper respiratory infections in Lebanon. The method used was a one-year multi – center prospective follow-up study of 1,320 healthy infants. Results showed that of the 1,320 recruited infants 770 (58.3%) had common cold or acute bronchitis on at least one occasion during the study period. Logistic regression analysis revealed that antibiotics misuse was more common among infants born to mothers with lower educational levels (odds ratio (or) – 1.6; 95% confidence interval [C1] 1.1-2.3. Further more pediatricians tend to prescribe antibiotics in dispensaries more often than in private clinics (OR = 1.4; 95% CI : 1.0-2.3).

Vohra S. et. al.,(2008) conducted a study on safety and tolerability of North American ginseng abstract in the treatment of pediatric upper respiratory tract infection. A Phase II Randomized

controlled Trial of 2 Dosing Schedules in Edmonton, Canada. A randomized, double – blind dose-finding 3 arm trial (2 dosing schedules of American ginseng extract with 1 place to control) method was used/ results showed seventy-five subjects were prerecruited from the general population in Edmonton of these, 46 subjects developed on upper respiratory tract infection and were randomly assigned (15 standard dose, 16 low dose, and 15 placebo) with 1 subject with drawing from the low-dose arm before beginning the intervention. No serious adverse events were reported. The frequency, severity and degree of association between the intervention and reported adverse events were not significantly different among each of the 3 treatment arms.

Chang J. et. al.,(2008) conducted a study on Andrographolide Dregs-pill in treatment of acute upper respiratory tract infection with external wind-heat syndrome. A multicenter and Randomized controlled trial in China. There were 202 samples. Results showed that after treatment in the phase, the cure rates in the trial group and the control group were 44.55%, 42.57% (full analysis set , FAS) and 45.00%, 43.00% (per protocol set, PPS), and the total obvious rates were 94.06%, 94.06% (FAS) and 95.00%, 95.00% (PPS), respectively. There was no significant differences between the two groups ($P>0.05$). In the phase, the cure rates in the trial group and the control group were 39.13%, 33.82% (FAS) and 39.69%, 33.58% (PPS) and the total obvious rates were 96.38%, 96.32% (FAS) and 96.36%, 96.27%(PPS) respectively . There were no significant differences between the two groups ($P>0.05$) too. No adverse effects were found in the trial.

Stalman W. et. al.,(1997) had conducted a study on the end of antibiotic treatment in adults with acute sinusitis- like complaints in general practice. A placebo – controlled double – blind, randomized trail was used. The results showed no significant difference in time to recover between doxycycline – treated group and the placebo – treated group. However, the adjusted hazard ratio for the group receiving doxycycline was 1.17 for the resolution of pain and 1.31 for the resumption of daily activities. After 10 days, 85% of all patients reported improvement and 60% were completely cured. Side effects were reported by 17% of the doxycycline – treated group, with two patients withdrawing because of side effects.

Butler C. C. et. al.,(2008) conducted a study on a case study of nurse management of upper respiratory tract infections in United Kingdom (UK) general practice. It was a descriptive study. Result showed that data were collected on 132 patients, consulting with the nurse. Patients seen by the nurse were younger, and less likely to be given antibiotics at the time of their illness. During the year following the consultation with the nurse, patients consulted slightly less often and received antibiotics for URTI less often compared with the year preceding the consultation.

vi) Studies related to complications of acute upper respiratory tract infection

Kristo et. al.,(2009) had conducted a study on timing of rhino sinusitis complications in children. Methods used was retrospectively all the medical records of children treated in hospital. Results showed that twenty children had such complications. Their symptoms of

uncomplicated acute respiratory infection had lasted for an average of 5.1 days before the appearance of the complication, and only 3 children had respiratory symptoms lasting longer than 10 days.

STUDIES RELATED TO STEAM INHALATION THERAPY

Lakshamma V.T.,(2009) had conducted a study on home based steam inhalation for treating upper respiratory infection. It was found that the 't' value was 0.78 on the 1st day and the 't' value was 9.72 on the 7th day after intervention with steam inhalation. She concluded that the steam inhalation is effective in the treatment of AURI. The steam inhalation showed the significant improvement in symptoms clearance starting from second day of therapy and obtained full recovery at the end of 7th day.

Moore M. and Little P.,(2007) conducted a study on Humidified air inhalation for treating croup in UK. The design used was systematic review and meta-analysis. The method used was randomized controlled trials with or without blinding. The sample size used was 135 patients with moderate croup. The results from the study reveals marginally favoured the treatment group with a weighted standardized mean difference of -0.14 (95% confidence interval = -0.75 to 0.47).

Meenu S.,(2006) had conducted a study to assess the effects of inhaling heated water vapour (steam), in the treatment of common cold by comparing symptoms, viral shedding and nasal resistance in UK. Randomized controlled trials (RCTs) method was used. Results showed that among the trials, three found benefits of steam for symptom relief

with the common cold (odds ratio (or) 95% confidence interval (CI) 0.31, 0.16 to 0.60; relative risk (RR) 0.56, 95% CI 0.4 to 0.79).

Hendley J.O. et. al.,(1994) conducted a study on effect of inhalation of hot humidified air on experimental rhinovirus infection. The design used was randomized controlled trial. Samples include 20 volunteers from the Charlottesville. Results showed that mean viral titers prior to the first treatment were $10^{(1-7)}$ tissue culture infections doses per milliliter in the active group and $10^{(1.5)}$ in the placebo group. Mean titers for the next 4 days were $10^{(1.7)}$, and $10^{(1.7)}$, $10^{(1.2)}$ and $10^{(0.9)}$ /mL in the active group and $10^{(1.8)}$, $10^{(1.9)}$, $10^{(1.6)}$, and $10^{(0.7)}$ /mL in the placebo group (no significant difference). The proportion of volunteer who shed virus on each day was also similar in the two groups.

Forstall G.J. et. al.,(1994) conducted a study on effect of inhaling heated vapor on symptoms of the common cold. The design used was double-blind placebo – controlled, randomized in vivo study. The study was conducted in virology laboratory and the outpatient department of the Cleveland (Ohio) Clinic Foundation with 68 samples. Results showed that there were no significant difference in daily symptom scores between the group ($P = 0.59$ to 0.83). The only statistically significant differences between the groups were lower nasal resistances at baseline in the steam group = 0.04 and percent improvement in nasal resistance favoring the placebo group on day 7($P=0.01$).

CHAPTER – III

METHODOLOGY

This chapter deals with the methodology adopted for the study. It includes research approach, research design, setting of study, sample and sampling technique, selection and development of data, sample size, instrument, data collection procedure and analysis.

RESEARCH APPROACH

Evaluative approach was used to conduct this study.

RESEARCH DESIGN

The research design for this study was pre - experimental one group pre-test and post test design.

SCHEMATIC REPRESENTATION

GROUP	PRE TEST	INTERVENTION	POST TEST
Group-1	0 ₁	X	0 ₂

The symbols used were

- 0₁ – Pre test to assess the symptoms of acute upper respiratory tract infection among under five children.
- X – Intervention.
- 0₂ – Post test to assess the symptoms of acute upper respiratory tract infection among under five children after the intervention.

SETTING OF THE STUDY

The study was conducted in urban area in Nanchiyampalayam which comes under Dharapuram block and it was 3km away from Bishop's College of Nursing. The total population was 6770. In this the under five children are 130. In this the male under five children are 73 and the female under five children are 57. The children between 2-5 years of age are 106. The area consists of 7 streets.

POPULATION

The populations for this study are under five children in Nanchiyampalayam.

SAMPLE

Under five children between the age of 2-5years with acute upper respiratory tract infection in Nanchiyampalayam.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria

- The children with the manifestation of acute upper respiratory tract infection including rhinnorrhoea, cough, sore throat and nasal obstruction.
- Under five children whose mothers are at home.
- Under five children who are not taking any other treatment.

Exclusion criteria

- ❖ The children suffering from acute upper respiratory tract infection with fever, vomiting, restlessness, ear ache and irritable cry.

- ❖ The children suffering from any systemic illness; and communicable diseases.
- ❖ The children whose mothers are sick during data collection.

SAMPLE SIZE

The sample size comprised of 30 under five children between 2- 5 years with acute upper respiratory tract infection.

SAMPLING TECHNIQUE

Purposive sampling technique was used in this study to select the samples.

INSTRUMENT

i) Description of the tool

The instrument consists of 3 sections.

Section-I

It contains the demographic variables such as age of the child, sex of the child, mode of delivery, type of family, monthly income of the family, past history of acute upper respiratory tract infection.

Section-II

It consists of observation check list which contain 14 items mainly the signs of acute upper respiratory tract infection. Out of which 14 items are signs and 6 items are symptoms.

Section – III

It consists of rating scale for assessment of children with acute upper respiratory tract infection. It consists of 10 items with 4 positive and 6 negative items.

ii) Scoring procedure

Observation Checklist

The observational checklist consists of 20 symptoms. Each symptoms if present was given score 1 and for absent 0. The total score was 20. The score was interpreted as follows:

Symptoms	Score	Percentage
Mild	0 – 7	0 – 33
Moderate	8 - 14	34 – 66
Severe	15 -20	67 - 100

Rating Scale

The rating scale consists of 10 items. It consists of 4 positive and 6 negative items. Each item is rated as never, occasionally, rarely and always. The total score was 30.

Options	Positive Scores	Negative Scores
Never	3	0
Occasionally	2	1
Rarely	1	2
Always	0	3

The score was interpreted as follows:

Items	Score	Percentage
Mild symptoms	0 – 10	0 – 33
Moderate symptoms	11 – 20	34 – 66
Severe symptoms	21 – 30	67 – 100

VALIDITY AND RELIABILITY OF THE TOOL

Validity

The validity of the tool was established in consultation with four nursing experts in the field of community health nursing, and one in community medicine. The tool was modified according to the suggestions and recommendation of the experts and finalized.

Reliability

The reliability of the observational checklist was assessed by using inter rater method (Karl Pearson's formula $R = 0.99$). The reliability of the rating scale was assessed by using inter rater method where the Karl Pearson's formula was used ($r = 0.98$).

PILOT STUDY

The pilot study was conducted on 5 samples for a period of 6 days in Kamarajapuram, Dharapuram. Oral consent was obtained from the mothers of the under five children, after explaining the purpose of study. The sample who met the inclusion criteria was selected by purposive sampling method and the study was conducted. On the first day, demographic variables was collected, followed that pre test was done to assess the symptoms of acute upper respiratory tract infection in under five children using the observation check list and rating scale. Then the steam inhalation using plain water was demonstrated to the

mother and the child was given inhalation for 15-20 minutes. Mother was instructed to repeat the steam inhalation in the morning and evening also under the supervision of the investigator. The home based steam inhalation was given for 5 days. On the 6th day to find out the effectiveness of home based steam inhalation, the under five children was assessed for the symptoms of acute upper respiratory tract infection using the same observation checklist and rating scale. The data was analyzed using descriptive and inferential statistics. The findings showed that the mean pre-test score was 25.2(SD=6.76) and the mean post-test score was 2.2(SD=0.74) and it was found to be feasible and practicable to conduct the main study.

DATA COLLECTION PROCEDURE

The study was conducted for five weeks in Nanchiyampalayam at Dharapuram. Written permission was obtained from the municipal commissioner, Dharapuram and oral consent was obtained from the mothers of under five children after explaining the purpose of the study. 30 participants were selected by using purposive sampling method. Pre test was conducted for the under five children by assessing the symptoms of acute upper respiratory tract infection by using the observation check list and rating scale. The steam inhalation using plain water was demonstrated to the mother and the under five children was given inhalation for 15 - 20 minutes. Mother was instructed to repeat the steam inhalation in the morning and evening also under the supervision of investigator. The home based steam inhalation was given for 5 days. For each under five children 45 minutes was spent for pre test, intervention. 25 minutes was spent for collecting demographic data and for assessing the signs and symptoms of acute upper respiratory tract infection, 15 - 20 minutes was spent for giving steam inhalation.

Totally 5-6 children were intervened per day. The procedure was repeated for the same 5-6 children for 5 days in the morning and evening. On the 6th day to find out the effectiveness of home based steam inhalation, the under five children was assessed for the symptoms of acute respiratory tract infection using the same observation check list and rating scale. The same procedure was followed for all the samples. The data was analyzed using descriptive and inferential statistics.

DATA ANALYSIS

The data was analyzed by using descriptive and inferential statistics. The statistical methods used to analyze the data were as follows.

S. No	DATA ANALYSIS	METHOD	OBJECTIVES
1.	Descriptive statistics	Frequency, percentage. Mean, standard deviation	To assess the symptoms of acute upper respiratory tract infection before steam inhalation therapy. To assess the symptoms of acute upper respiratory tract infection after steam inhalation therapy.
2.	Inferential statistics	Paired 't' test	To compare the symptoms of acute upper respiratory infection before and after steam inhalation therapy.

3.		Chi-square method	To find out the association between the post test score symptoms among under five children with their selected demographic variables.
----	--	-------------------	---------------------------------------------------------------------------------------------------------------------------------------

PROTECTION OF HUMAN SUBJECTS

The research proposal was approved by the research committee prior to pilot study. Verbal consent was taken from the mother of under five children by explaining the purpose of the study before collecting the data.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from the 30 under five children with acute upper respiratory tract infection regarding reducing the symptoms of acute upper respiratory tract infection in Nanchiyamplayam at Dharapuram.

The present study was designed to assess the effectiveness of home based steam inhalation therapy among under five children with signs and symptoms of acute upper respiratory tract infection. The collected data was organized and interpreted using descriptive and inferential statistics and was coded and analyzed as per objectives of the study under the following headings.

The data has been organized and tabulated as follows.

Section A : Distribution of demographic variables.

Section B : Assess the symptoms of acute upper respiratory tract infection among under five children before steam inhalation therapy.

Section C : Assess of symptoms of acute upper respiratory tract infection among under five children after steam inhalation therapy.

Section D : Comparison of the symptoms of acute upper respiratory tract infection among under five children before and after steam inhalation therapy.

Section E : Association between the symptoms of acute upper respiratory tract infection among under five children after steam inhalation therapy with their selected demographic variables.

SECTION A : DISTRIBUTION OF DEMOGRAPHIC VARIABLES

Table 1: Frequency and percentage distribution of demographic variables of under five children with acute upper respiratory tract infection. n = 30

S. No	Demographic Variables	Frequency (F)	Percentage (%)
1	Age		
	a) 2 - 3 years	9	30%
	b) 3 - 4 years	9	30%
	c) 4 - 5 years	12	40%
2	Sex		
	a) Male	14	46.7%
	b) Female	16	53.3%
3	Mode of delivery		
	a) Normal vaginal delivery	22	73.3%
	b) Cesarean Section	8	26.7%
4	Type of family		
	a) Nuclear family	22	73.3%
	b) Joint family	8	26.7%
5	Income per month		
	a) Below Rs. 1000	0	0
	b) Rs. 1001 - Rs. 2000	10	33.3%
	c) Rs. 2001 - Rs. 5000	19	63.3%
	d) Rs. 5001 and above	1	3.4%
6	Past history of AURI		
	a) Recurrent	5	16.7%
	b) Occasionally	9	30%
	c) Rarely	16	53.3%

Table – 1 showed that among 30 under five children receiving steam inhalation therapy 12(40%) belong to 4 - 5 years, 9(30%) belong to 2 - 3 years and 9(30%) belong to 3 – 5 years of age.

Regarding sex 16(53.3%) were female and 14 (46.7%) were males.

Regarding mode of delivery 22(73.3%) were normal vaginal delivery and 8 (26.7%) were cesarean section.

Regarding the type of family 22 (73.3%) belong to nuclear family and 8 (26.7%) belong to joint family.

Regarding income per month 19 (63.3%) belong to Rs.2001-Rs.5000 income group, 10 (33.3%) belong to Rs.1001- Rs. 2000 income group, 1(3.4%) belong to Rs. 5000 and above income group.

Regarding past history of acute upper respiratory tract infection 16 (53.3%) had rare history, 9(30%) had occasional history and 5 (16.7%) had recurrent history of acute upper respiratory tract infection.

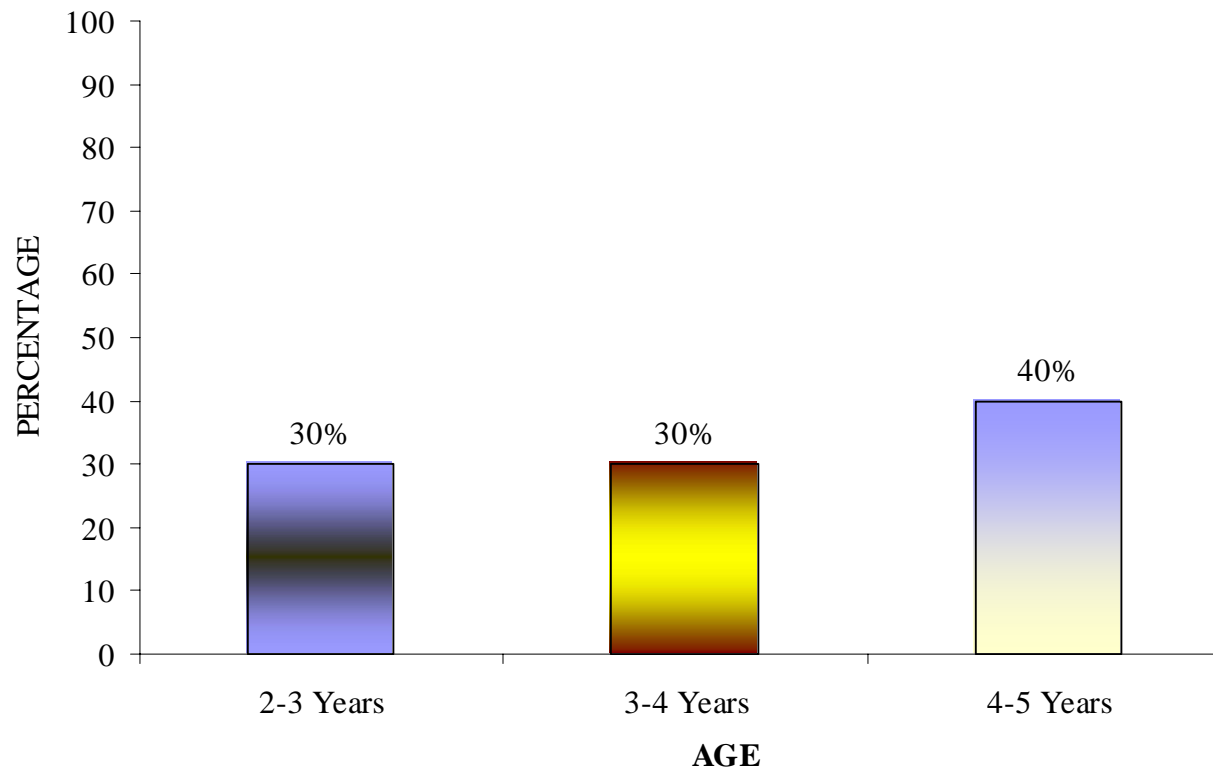


Fig : 2 Percentage distribution of under five children with acute upper respiratory tract infection receiving steam inhalation therapy according to their age.

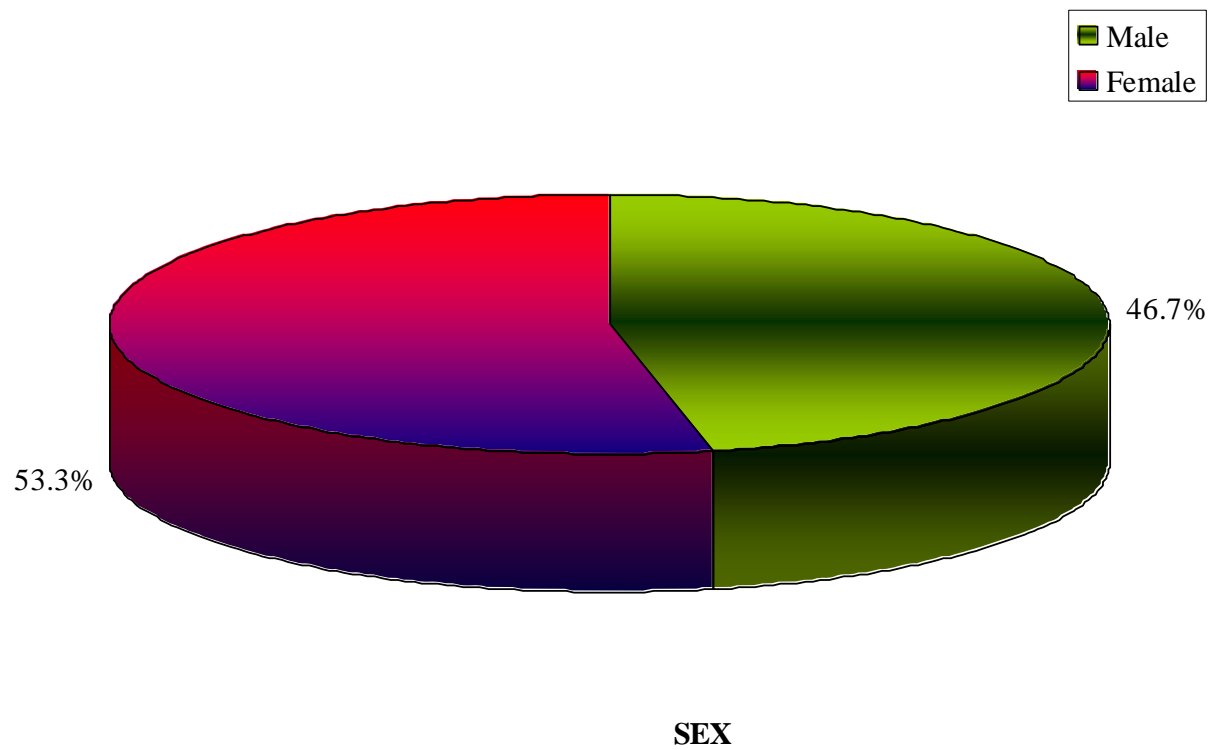
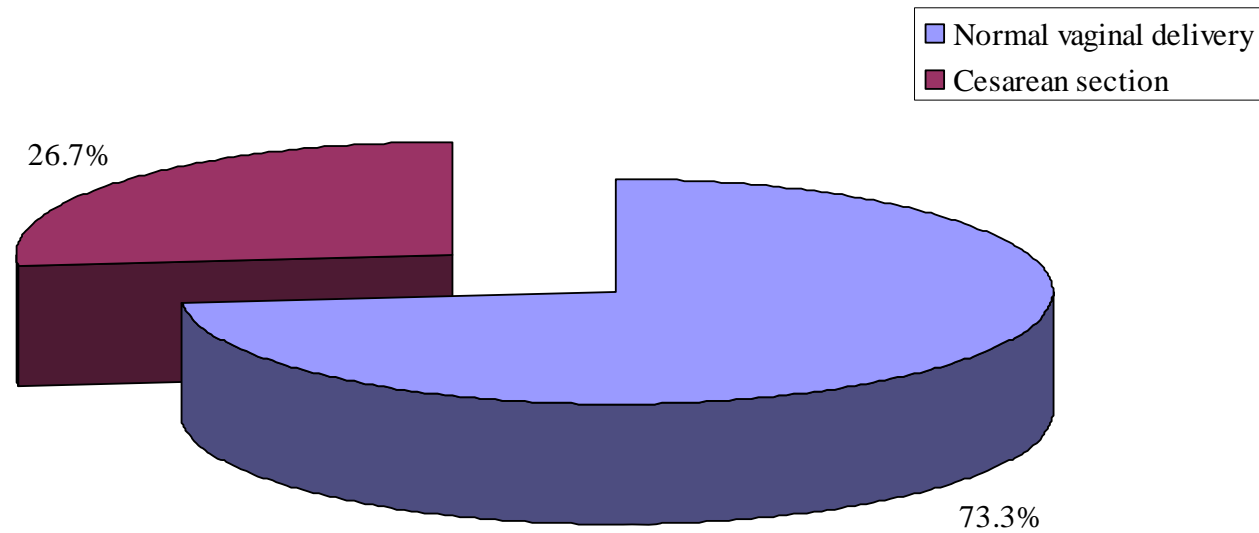
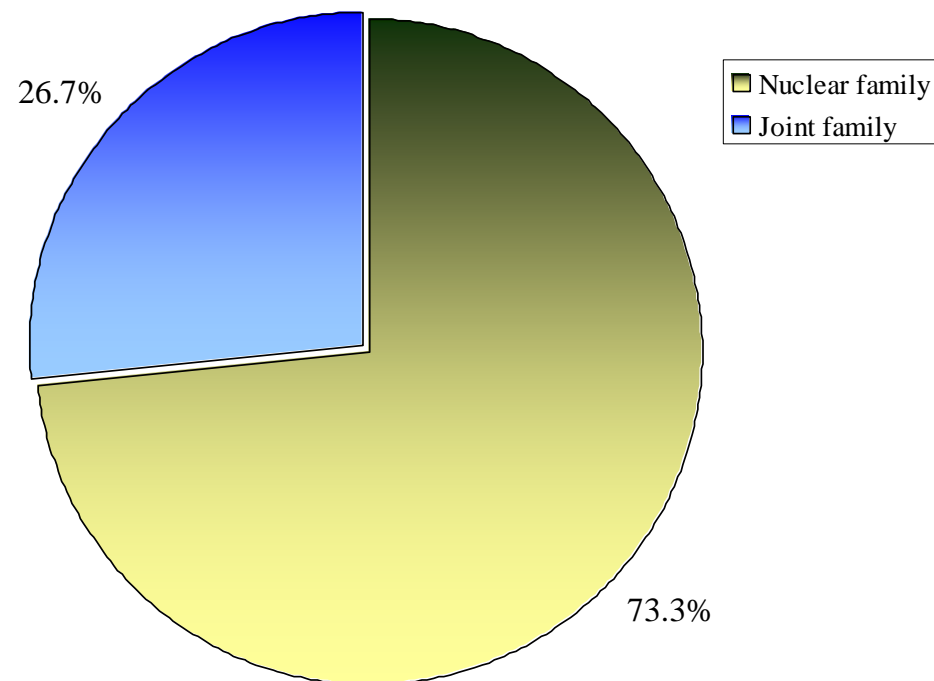


Fig : 3 Percentage distribution of under five children with acute upper respiratory tract infection receiving steam inhalation therapy according to their sex.



MODE OF DELIVERY

Fig:4 Percentage distribution of under five children with acute upper respiratory tract infection receiving steam inhalation therapy according to their mode of delivery.



TYPE OF FAMILY

Fig : 5 Percentage distribution of under five children with acute upper respiratory tract infection receiving steam inhalation therapy according to their type of family .

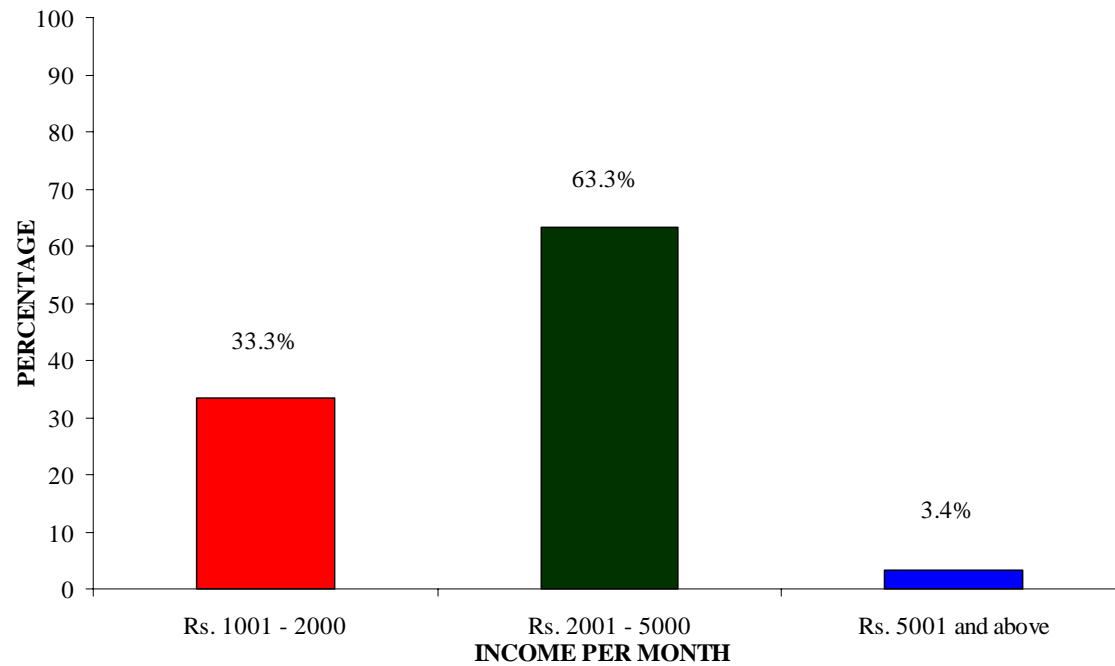


Fig:6 Percentage distribution of under five children with acute upper respiratory tract infection receiving steam inhalation therapy according to their income per month.

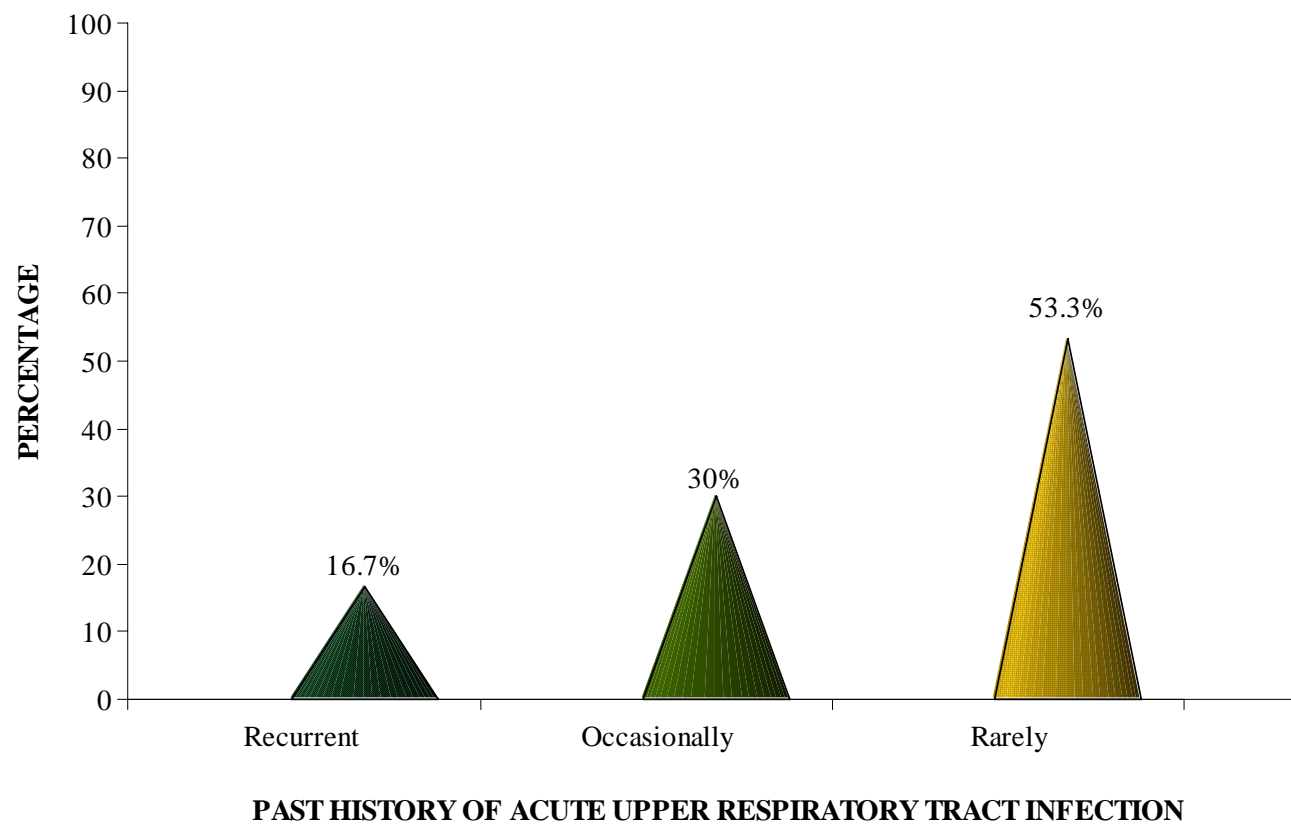


Fig : 7 Percentage distribution of under five children with acute upper respiratory tract infection receiving steam inhalation therapy according to their past history of acute upper respiratory tract infection.

SECTION B: ASSESS THE SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT INFECTION AMONG UNDER FIVE CHILDREN BEFORE STEAM INHALATION THERAPY.

TABLE 2: Frequency and percentage of the symptoms of acute upper respiratory tract infection among under five children before steam inhalation therapy.

n = 30

CATEGORY	PRE TEST	
	F	%
Mild	4	13.4%
Moderate	26	86.6%
Severe	0	-

Table 2 shows that the symptoms of acute upper respiratory tract infection among under five children before receiving steam inhalation therapy. Among 30 under five children with acute upper respiratory tract infection 26 (86.6%) had moderate symptoms and 4 (13.4%) had mild symptoms.

**SECTION - C : ASSESS THE SYMPTOMS OF ACUTE UPPER
RESPIRATORY TRACT INFECTION AMONG
UNDER FIVE CHILDREN AFTER STEAM
INHALATION THERAPY.**

TABLE - 3 : Frequency and percentage of symptoms of acute upper respiratory tract infection among under five children after steam inhalation therapy.

n = 30

CATEGORY	POST TEST	
	F	%
Mild	30	100%
Moderate	-	-
Severe	-	-

Table 3 shows that among 30 children receiving steam inhalation all the 30 (100%) children had mild symptoms after receiving steam inhalation therapy.

**SECTION - D : COMPARISION OF THE SYMPTOMS OF ACUTE
UPPER RESPIRATORY TRACT INFECTION
AMONG UNDER FIVE CHILDREN BEFORE
AND AFTER STEAM INHALATION THERAPY.**

TABLE - 4 : Comparison of frequency and percentage distribution of the symptoms of acute upper respiratory tract infection among under five children before and after steam inhalation therapy.

n = 30

Category	Pre test		Post test	
	F	%	F	%
Mild symptoms	4	13.4	30	100
Moderate symptoms	26	86.6	-	-
Severe symptoms	0	-	-	-

Table 4 shows that in pretest the symptoms of acute upper respiratory tract infection depicts that, 4 (13.4%) had mild symptoms and 26 (86.6%) had moderate symptoms. In post test all the 30(100%) samples had mild symptoms of acute upper respiratory tract infection.

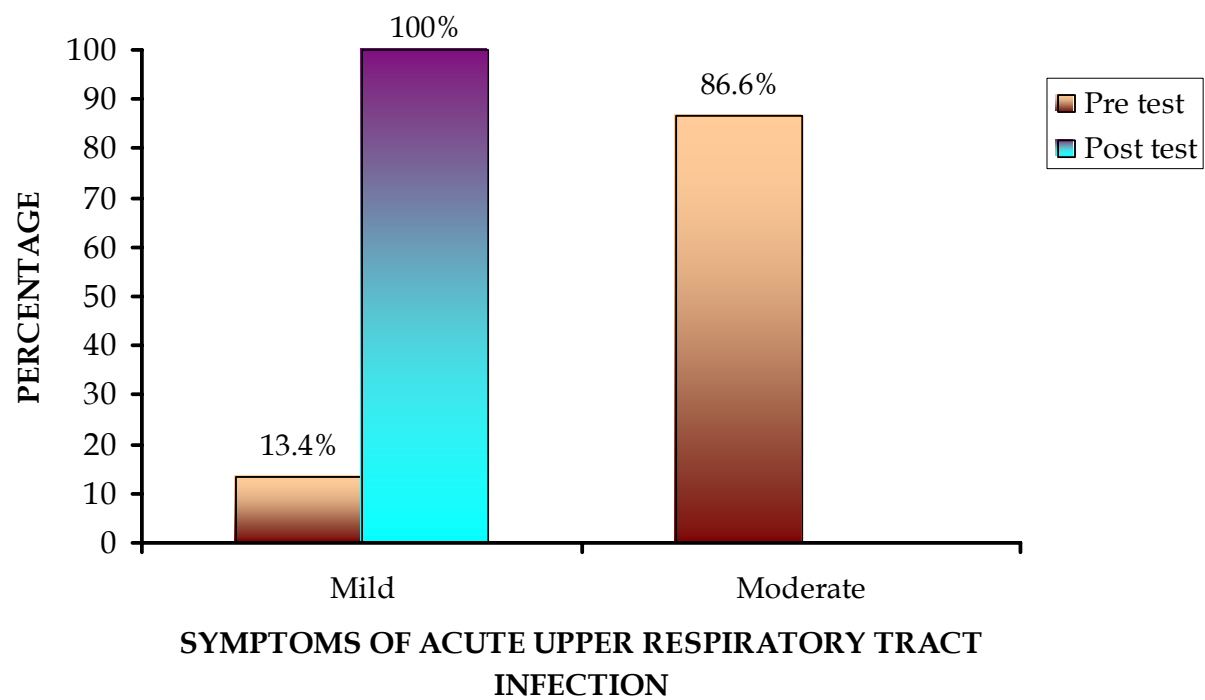


Fig : 10 Percentage distribution of pre test and post test symptoms score of acute upper respiratory tract infection

TABLE - 5 : Comparison of mean, mean percentage, standard deviation, mean difference and 't' value score of the symptoms of acute upper respiratory tract infection among under five children before and after steam inhalation therapy.

n = 30

S. No	Variable	Mean	Mean Percentage	SD	Mean Difference	't' value	Table 't' value
1	Pre Test	21.8	72.7	4.45	18.27	23.20	2.045
2	Post Test	3.53	11.8	1.95			

df (29) 2.045

P>0.05

Table 5 shows that the mean scores of pre test and post test level of symptoms of acute upper respiratory tract infection among under five children 21.8 (SD \pm 4.45) and 3.53 (SD \pm 1.95) respectively.

Post test symptoms mean score level (SD=1.95) is lower than the pre test score level (SD=4.45). Paired 't' value is 23.20 which was significant at 0.05 level. Further the mean difference revealed that home based steam inhalation therapy was effective in reducing the symptoms of acute upper respiratory tract infection among under five children.

SECTION - E : ASSOCIATION BETWEEN THE SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT INFECTION AMONG UNDER FIVE CHILDREN AFTER STEAM INHALATION THERAPY WITH THEIR SELECTED DEMOGRAPHIC VARIABLES.

n = 30

Demographic variables	Mild	Moderate	Severe	X²	Table X² value	Inference
Age						
a) 2 – 3 years	9	-	-	0	9.49	NS
b) 3 – 4 years	9	-	-	df(4)		
c) 4 – 5 years	12	-	-			
Sex						
a) Male	14	-	-	0	5.99	NS
b) Female	16	-	-	df(2)		
Mode of delivery						
a) Normal vaginal delivery	22	-	-	0	5.99	NS
b) Cesarean Section	8	-	-	df(2)		
Type of family						
a) Nuclear family	22	-	-	0	5.99	NS
b) Joint family	8	-	-	df(2)		
Income per month						
a) Below Rs. 1000	-	-	-	0	12.59	NS
b) Rs. 1001 – Rs. 2000	10	-	-	df(6)		
c) Rs. 2001 – Rs. 5000	19	-	-			
d) Rs. 5001 and above	1	-	-			
Past history of acute upper respiratory tract infection						
a) Recurrent	5	-	-	0	9.49	NS
b) Occasionally	9	-	-	df(4)		
c) Rarely	16	-	-			

NS - Non - Significant

P<0.05 level

Chi - square value was calculated to find out the association between symptoms of acute upper respiratory tract infection after steam inhalation therapy with their selected demographic variables. There is no association found between the symptoms of acute upper respiratory tract infection after home based steam inhalation therapy with their selected demographic variables.

CHAPTER – V

DISCUSSION

The discussion chapter deals with sample characteristics and objectives of the study. The aim of this present study was to evaluate the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infection among under five children (2-5 years).

DESCRIPTION OF DEMOGRAPHIC VARIABLES

Majority of the children 12 (40%) were in the age group of 4 – 5 years, most of them 16(53.3%) were female, majority of the children 22(73.3%) were normal vaginal mode of delivery, and most of them 22(73.3%) belong to nuclear family, and most of the children 19(63.3%) belong to monthly income of Rs.2001 – Rs.5000 and majority of children 16(53.3%) had rare past history of acute upper respiratory tract infection.

THE FINDINGS ARE DISCUSSED UNDER THE FOLLOWING HEADINGS

- Assess the symptoms of acute upper respiratory tract infection before steam inhalation therapy.
- Assess the symptoms of acute upper respiratory tract infection after steam inhalation therapy.
- Compare the symptoms of acute upper respiratory tract infection before and after steam inhalation therapy.

- Find out the association between the symptoms of acute upper respiratory tract infection after home based steam inhalation therapy with their selected demographic variables.

THE FIRST OBJECTIVE OF THE STUDY WAS TO ASSESS THE SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT INFECTION AMONG UNDERFIVE CHILDREN BEFORE STEAM INHALATION THERAPY

Assessment of symptoms of acute upper respiratory tract infection among 30 under five children, it was found that most of the children 26(86.6%) had moderate symptoms of acute upper respiratory tract infection and 4(13.4%) had mild symptoms of acute upper respiratory tract infection before home based steam inhalation therapy.

These findings are consistent with the study findings of Symekher S.M.L. et. al.,(2008) were the results revealed among 388 children between the age of 1 month to 132 months 26% had upper respiratory tract infection.

THE SECOND OBJECTIVE OF THE STUDY WAS TO ASSESS THE SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT INFECTION AMONG UNDERFIVE CHILDREN AFTER STEAM INHALATION THERAPY

Assessment of symptoms of acute upper respiratory tract infection among 30 under five children, it was found that all 30 (100%) children had mild symptoms of acute upper respiratory tract infection after home based steam inhalation therapy.

This study findings were consistent with the study findings of Meenu S.,(2006) which showed that among 6 trails, 3 found benefits of steam inhalation for symptoms relief with common cold (odds ratio 95%). The study revealed that steam inhalation therapy showed significant improvement in symptoms clearance in acute upper respiratory tract infection.

THE THIRD OBJECTIVE OF THE STUDY WAS TO COMPARE THE SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT INFECTION AMONG UNDERFIVE CHILDREN BEFORE AND AFTER STEAM INHALATION THERAPY

Among the 30 under five children, the comparison of pretest scores and post test scores of the symptoms of acute upper respiratory tract infection before and after home based steam inhalation therapy showed that the mean value of post test 3.53 (S.D = 1.95) was lower when compared with the mean pre test value of 21.8 (S.D = 4.45); 't' value of 23.20 shows high significance at $P < 0.05$ level. This reveals that there is a high significant difference between the post test score and the pre test score of the symptoms of acute upper respiratory tract infection before and after home based steam inhalation therapy.

This study findings were consistent with the study finding of V.T. Lakshmmamma (2009), which shows the 't' value was 0.78 on the 1st day and the 't' value was 9.72 on the 7th day after intervention with home based steam inhalation. It showed that the home based steam inhalation therapy showed the significant improvement in symptoms clearance

starting from 2nd day of therapy and obtained full recovery at the end of 7th day.

Therefore the research hypothesis H_1 : “The mean post test scores is significantly lower than the mean pre test scores of symptoms among under five children with acute upper respiratory tract infection” was accepted.

THE FOURTH OBJECTIVE OF THE STUDY WAS TO FIND OUT THE ASSOCIATION BETWEEN THE SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT INFECTION AMONG UNDERFIVE CHILDREN AFTER STEAM INHALATION THERAPY WITH THEIR SELECTED DEMOGRAPHIC VARIABLES

Chi square values were calculated to find out the association of symptoms after home based steam inhalation therapy with their demographic variables age of the child ($X^2 = 0$), sex of the child ($X^2 = 0$), mode of delivery ($X^2 = 0$), type of family ($X^2 = 0$) income per month ($X^2=0$) past history of acute upper respiratory tract infection ($X^2 = 0$) .

All the demographic variable had no association with the symptoms score of acute upper respiratory tract infection after home based steam inhalation therapy.

This study findings were contradict with the study findings of Zaman K. et. al.,(2008) where the results revealed that wasting and depressed cell-mediated immunity were associated with the incidence of AURI among rural Bangladeshi children.

Therefore the research hypothesis **H₂**: “There will be a significant association between the post test scores of symptoms among under five children with acute upper respiratory tract infection with their selected demographic variables” was rejected.

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATION, RECOMMENDATIONS AND LIMITATION

This chapter consists of

1. Summary of the study
2. Conclusion
3. Implication for nursing
4. Recommendation
5. Limitation

SUMMARY OF THE STUDY

The focus of the study was to assess the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infection among under five children (2-5 years). The design used for this study was pre experimental one group pre - test and post test design. The conceptual framework was based on Modified Wiedenbach's Helping Art of Clinical Nursing Theory (1964). The subjects were selected by purposive sampling technique. 30 children with the age group of 2 - 5 years were selected for the study. The instruments used for the study were observation checklist and rating scale. 30 under five children with acute upper respiratory tract infection were selected and home based steam inhalation therapy was given to them for 15 - 20 minutes in the morning and in the evening. This was repeated for 5 days. On the 6th day to find out the effectiveness of home based steam inhalation therapy, the under five children were assessed for the symptoms of acute upper respiratory tract infection using the same observation checklist, interview schedule and rating scale.

THE MAJOR FINDINGS OF THE STUDY

Distribution of demographic characteristics of the under five children

- Majority of the children 12 (40%) were in the age group of 4-5 years.
- Most of them were female 16 (53.3%)
- Majority of the children 22(73.3%) were normal vaginal mode of delivery.
- Most of them belong to nuclear family 22 (73.3%)
- Most of the children 19 (63.3%) belong to Rs.2001- Rs.5000 income per month.
- Majority children 16 (53.3%) had rare past history of acute upper respiratory tract infection.

During pre test, the findings revealed that most of the children 26 (86.6%) had moderate symptoms of acute upper respiratory tract and 4 (13.4%) had mild symptoms of acute upper respiratory tract infection before home based inhalation therapy.

During post test after giving home based steam inhalation therapy, the findings revealed that all 30 (100%) children had mild symptoms of acute upper respiratory tract infection.

Highly significant difference was found between pretest symptoms score of acute respiratory tract infection among under five children and post test symptoms scores of acute upper respiratory tract infection after home based steam inhalation therapy among under five children. The mean post test value 3.53 (S.D = 1.95) was lower when compared with the mean pre test value of 21.8 (S.D = 4.45); 't' value was 23.20 which showed highly significant at $P < 0.05$ level.

The study revealed that there is significant improvement in symptoms clearance in acute upper respiratory tract infection among under five children after steam inhalation therapy.

There was no significant association between the symptom score of acute upper respiratory tract infection after home based steam inhalation therapy, with their demographic variables like age, sex, mode of delivery, type of family, monthly income of the family and past history of acute upper respiratory tract infection.

CONCLUSION

The present study is aimed to reduced the symptoms of acute upper respiratory tract infection among the under five children. The intervention used in the study is home based steam inhalation therapy. 30 samples were selected for steam inhalation who had scored in mild and moderate. The study findings revealed that there is significant difference in the pre test score of acute upper respiratory tract infection and the post test score of acute upper respiratory tract infection after home based steam inhalation therapy among the under five children ('t' value 23.20) at 0.05 level. It is evident that home based steam inhalation therapy is effective in reducing the symptoms of acute upper respiratory tract infection among under five children.

IMPLICATIONS FOR NURSING

The investigator recommended the following implications drawn from the study which are of vital concern for nursing education, nursing service, nursing administration and nursing research.

NURSING SERVICE

The home based steam inhalation therapy using plain water can be used effectively by the community health nurse in reducing the symptoms of acute upper respiratory tract infection.

NURSING EDUCATION

Nurse educators must reinforce the students to practice simple and cost effective home management procedures in reducing the symptoms of acute upper respiratory tract infection at home and in community centers.

NURSING ADMINISTRATION

The nurse administrators can take initiation in organizing continuing education, in-service education programmes on management of acute upper respiratory tract infection among under five children in home set up and in community centers.

NURSING RESEARCH

- ❖ The findings may be utilized by the emerging researchers for their reference purpose.
- ❖ Further research can be done to measure the effectiveness of medicated home based steam inhalation therapy in reducing the symptoms of acute upper respiratory tract infection among under five children.

RECOMMENDATIONS

1. Similar study can be replicated on a larger sample.
2. A study can be conducted to assess the knowledge and attitude among parents regarding the home based steam inhalation for reducing the symptoms of acute upper respiratory tract infection for under five children.

LIMITATIONS

The investigator faced difficulty in explaining the mothers about the importance of steam inhalation among under five children for reducing the symptoms of acute upper respiratory tract infection and it was time consuming for data collection.

BIBLIOGRAPHY

BOOK REFERENCE

1. Achar's, (2007). *Textbook of Pediatrics*. (3rd ed.). published by New Delhi: Orient Longman, pp. 494 - 501
2. Augustine, A. (2004). *Clinical Nursing - Procedure Manual*. (1st ed.). published by Chennai: B.I. Publications Pvt. Ltd, p. 32
3. Basavanthappa, B.T. (2006). *Pediatric/Child Health Nursing*. (1st ed.). published by Delhi: Ahuja Publishing House, pp. 606 - 15
4. Clarke, M. (1977). *Practical Nursing*. (12th ed.). published by London: Bailliere Tindall, pp. 203-04
5. Ghai, O.P. (2007). *Essential Pediatrics*. (6th ed.). published by Delhi: Dr.O.P. Ghai, pp. 335-41
6. Gowda, S.N.N. (2005). *Basic Principles and Practice of Nursing*. (1st ed.). published by Bangalore: J.N. publication, pp. 433-34
7. Gupta, P. (2004). *Essential Pediatric Nursing*. (2nd ed.). published by New Delhi: CBS publishers, pp. 246-48
8. Gupte, S. (1998). *The Short Text Book of Pediatrics*. (8th ed.). published by New Delhi: Jaypee Brothers, p. 206
9. Karu, L. (2009). *A Text Book of Nursing Foundations*. (1st ed.). published by Jalandhar: S.Vikas & Co, pp. 305-07
10. Kumari, N. (2009). *A Text Book of Community Health Nursing -I*. (1st ed.). India: published by PV books, pp. 372-73, 375-78

11. Mahajan, G. (2005). *Textbook of Preventive and Social Medicine*. (3rd ed.). published by New Delhi: Jaypee brothers., pp. 155-58
12. Marlow, D. R. (2006). *Textbook of Pediatric Nursing*. (6th ed.). published by New Delhi: Elsevier, pp. 918-19, 946-47, 1029-30
13. Nancy, (1996). *Stephanie's Principles and Practice of Nursing*. Volume two. (3rd ed.). published by Indore: N.R. Brothers, pp. 100-06
14. Natesan, S. (1999). *Manual on Nursing Principles and Practice*. (1st ed.). published by India: Omayal Ahi college of Nursing, pp. 131-35
15. Nelson, (1996). *Textbook of Pediatrics*. (11th ed.). published by India: Saunders, pp.1169-74
16. Park, K. (2009). *Preventive and Social Medicine*. (20th ed.). published by Jabalpur: Bhanot, pp. 151-53
17. Potts, (2007). *Pediatric Nursing Caring for Children and Their Families*. (2nd ed.). published by Thomson Delmar Learning, pp. 710-13, 723-24
18. Stone, C. (1998). *Comprehensive Community Health Nursing*. (5th ed.). published by Missouri: Mosby, p. 430
19. Tabulwadkar, (1993). *Pediatric Nursing*. published by Bombay: Vora Medical Publications, pp. 132-34
20. The Trained Nurse's Association of India, (2005). *Fundamentals of Nursing - a procedure manual*. (1st ed.). published by Secretary General, pp. 495-98
21. Thresyamma, C.P. (2003). *Fundamentals of Nursing Procedure Manual for General Nursing and Midwifery Course*. (1st ed.). published by New Delhi: Jaypee Brothers Medical Publishers (P) Ltd, pp. 295-97

22. Waechter, (1970). *Nursing Care of Children*. (10th ed.). published by Philadelphia: J.B. Lippincott Company, pp. 737-46
23. Wong's, (2009). *Nursing Care of Infants and Children*. (8th ed.). published by New Delhi: Elsevier, pp. 1319-25, 1352-55, 1670.

JOURNAL REFERENCE

24. Butler, C. C. et. al. (2009). A Case Study of Nurse Management of Upper Respiratory Tract Infections in General Practice. *Journal of Advanced Nursing*, 33:(33) 328-33
25. Chang, J. et. al. (2008). Andrographolide Drop-pill in Treatment of Acute Upper Respiratory Tract Infection with External Wind - heat Syndrome: A Multicenter and Randomized Control Trial. *Journal of Chinese Integrative Medicine*, 6:(12) 1238-45
26. Chhabra, P. et. al. (1992). Beliefs and Practices Followed During Acute Respiratory Infections in Under Fives in a Rural Area. *Indian Journal of Preventive and Social Medicine*, : 108-13 .
27. Flower, L. (2007). Knowledge and Practice Regarding Acute Upper Respiratory Tract Infection. *Nursing Journal of India*, XCVIII:(4)
28. Gouarin, S et. al. (2008). Study of influenza C virus infection in France. *Journal of Medical Virology*, 80:(8) 1441-46
29. Gupta, N. et. al. (2007). An Evaluation of Diarrheal Diseases and Acute Respiratory Infections Control Programmes in a Delhi Slum. *Indian Journal of Pediatrics*, 74:(5) 471 - 76

30. Hay, A.D. et. al. (2002). The Natural History of Acute Cough in Children Aged to 4 Years in Primary Care: a systematic review *Br. J. Gen Pract*, 52: 401-09
31. ICMR *Bulleti.* (2003). Health Status of Primitive Tribes of Orissa, 33:10
32. Jain, N. et. al. (2001). Upper Respiratory Tract Infections. *Indian Journal of Pediatrics*, 68:(12) 1135-38
33. Kristo, et. al. (2009). Timing of Rhinosinusitis Complications in Children. *Pediatric Infectious Disease Journal*, 28:(9) 769-71
34. Kwong, K.L. et. al. (2009). Influenza – related Hospitalisations in Children. *Journal of Pediatrics and Child Health*, 45:(11) 660-64
35. Lakshamma, V.T. (2009). Home based steam inhalation for treating upper respiratory infection. *Nightingale Nursing Times*, 9-11
36. Li, J. et. al. (2009). Antimicrobial Prescribing for Upper Respiratory Infections and its Effect on Return Visits. *Family Medicin.*, 41:(3)
37. Mar, D.C. et. al. (2002). Upper Respiratory Tract Infection *Clin Evid*, 8: 1583-91
38. Meenu, S. (2006). Heated, Humidified Air for the Common Cold. *Cochrane Database of Systematic Reviews*, 3
39. Revai, K. et. al. (2007). Incidence of Acute Otitis Media and Sinusitis Complicating Upper Respiratory Tract Infection: The Effect of Age. *PEDIATRICS*, 119:(6) e1408-e12
40. Shah, H.K. (1998). A Longitudinal Study of Acute Respiratory Infections in the Under Five Age Group in a Rural Area of Goa. *Indian Journal of Community Medicine*, XXIII:(3) 120-22

41. Shields, M.D. et. al. (2008). British Thoracic Society Guidelines Recommendations for the Assessment and Management of Cough in Children. *Thorax*, 63: iii1-iii15
42. Silvennoinen, et. al. (2009). Clinical Presentation of Influenza in Unselected Children Treated as Outpatients. *Pediatric Infectious Disease Journal*, 24:(5) 372-75
43. Stalman, W et. al. (1997). The End of Antibiotic Treatment in Adults with Acute Sinusitis - like complaints in general practice? A placebo - controlled double - blind randomized doxycycline trial. *British Journal of General Practice*, 47: 794-99
44. Tamim, H. et. al. (2009). Prospective Study on Antibiotics Misuse Among Infants with Upper Respiratory Infections. *European Journal of Pediatrics*, 168:(6) 667-72
45. Vabret, A. et. al. (2008). Human (non- severe acute Respiratory syndrome) Coronavirus Infections in Hospitalised Children in France. *Journal of Paediatrics and Child Health*, 44:(4) 176-81
46. Vohra, S. et. al. (2008). Safety and Tolerability of North American Ginseng Extract in the Treatment of Pediatric Upper Respiratory Tract Infection: A Phase II Randomized, Controlled Trial of 2 Dosing Schedules. *Pediatrics*, 122:(2) e402-e10
47. Yeolekar, L.R. et. al. (2008). Respiratory Viruses in Acute Respiratory Tract Infections in Western India. *Indian Journal of Pediatrics*, 75:(4) 341-45
48. Zaman, K. et. al. (2009). Malnutrition, Cell - mediated Immune Deficiency and Acute Upper Respiratory Infections in Rural Bangladeshi Children. *Acta Paediatrica*, 86:(9) 923-27

NET REFERENCE

49. http://www.amazinghealing.com/aiyana.pha?nav=6&article_id=20
50. <http://uk.answers.yahoo.com/question/index?qid=20070403021805AABOags>.
51. <http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/infectious-disea>.
52. http://.wikipedia.org/wiki/Common_cold
53. <http://en.wikipedia.org/wiki/Influenza>
54. <http://en.wikipedia.org/wiki/Rhinitis>
55. <http://www.essentialoils.co.za/steam-inhalation.htm>
56. <http://www.healingsteam.com/respiratory.htm>
57. <http://www.mhra.gov.uk/safetyinformation/safetywarnings/alertsandrecalls/safetywarningandmessageformedicines/>
58. <http://www.montekids.org/healthlibrary/peds/respire/uricold/>
59. <http://publicaffairs.uth.tmc.edu/distinctions/archive/2006/January/nonamedicine.html>.
60. www.wren.soton.ac.uk/pdf/SNIFS.pdf
61. <http://www.springerlink.com/content/a1>
62. http://www.who.int/vaccine_research/diseases/ari/en/index.html

APPENDIX - A

LETTER SEEKING PERMISSION FOR CONDUCTING THE STUDY

அனுப்புநர்
திரு. சா. துரை.எம்.ஏ.,
ஆணையர்
தாராபுரம் நகராட்சி

பெறுநர்
முதல்வர்
பிஷ்ப்நர்சிங் கல்லூரி
சி.எஸ்.ஐ மிஷன் காம்ப்வுண்ட்
தாராபுரம்

ந.க.எண் 3352/09/எச்1

நாள் 22.04.10

பொருள் :- தாராபுரம் நகராட்சி - நகராட்சி பகுதிகளில் நோய்கள் பற்றி
பொதுமக்களிடம் விழிப்புணர்வு ஆய்வு கட்டுரை சமர்ப்பிக்க MSc (N)
மாணவிகளுக்கு அனுமதி அளித்தல் - தொடர்பாக.

பார்வை :- முதல்வர் பிஷ்ப் நர்சிங் கல்லூரி, தாராபுரம் அவர்களின்கீழ்

தாராபுரம் நகராட்சி எல்லைக்குறிப்பிட்ட நஞ்சியம்பாளையம் பகுதியில்
வார்டுஎண் 1,2,3, மற்றும் 4 ஆகிய பொதுமக்களிடம் நோய்கள் பற்றிய விழிப்புணர்வு
குறித்து ஆய்வுக்கட்டுரை தயார் செய்ய தங்களது கல்லூரி MSc (N) இரண்டாம்ஆண்டு
பயிலும் 1) செல்வி. லெடியா ஜாஸ்மின் 2) திருமதி. நீயா அனியன் 3) திருமதி. அனுகயா
4) செல்வி.சாலினி ஆகிய மாணவிகளுக்கு இதன் மூலம் அனுமதியளிக்கப்படுகிறது.


ஆணையர்
தாராபுரம் நகராட்சி


22-4-10

APPENDIX - B
LETTER SEEKING EXPERT'S OPINION FOR
VALIDITY OF TOOLS

From

Ms. A. Lydia Jasmine,
M.Sc. (Nursing) II year,
Bishop's College of Nursing,
Dharapuram.

To

Respected Madam/Sir,

SUB : Requisition for content validity of tool.

I am M.Sc. (Nursing) second year student of Bishop's College of Nursing, Dharapuram, under Dr. M.G.R Medical University, Chennai. As a partial fulfillment of my M.Sc.(N) Degree Programme, I am conducting a research on "**A Study to assess the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infections among under five children in Nanchiyampalayam at Dharapuram**". One of the initial steps of the research study is to develop a tool. I am sending the above stated for content validity and for your expert and valuable opinion.

I will be very thankful to return it to the undersigned.

Your's sincerely,

Encl :

(A.LYDIA JASMINE)

1. Certificate of content validity
2. Statement of problem, objectives, operational definition, hypothesis
3. Description of the tool and tool for data collection
4. Self addressed envelope

Principal

APPENDIX - C
COMMUNITY HEALTH NURSING

LIST OF EXPERTS OF VALIDATION

- 1) **Prof. Mrs. Sivagami.R , M.Sc(N).,**
HOD,
Department of Community Health Nursing,
KMCH College of Nursing,
Coimbatore.
- 2) **Mrs. Amudha, M.Sc(N).,**
Associate Professor,
HOD of Community Health Nursing,
Dhanvanthri College Of Nursing,
Namakkal.
- 3) **Mr. Kandaswamy, M.Sc(N).,**
HOD,
Department of Community Health Nursing,
Sri Gokulam College of Nursing,
Salem.
- 4) **Mr.Y. John Sam Arun Prabu, M.Sc(N).,**
Reader,
Department of Community Health Nursing,
CSI Jayaraj Annapackiam College of Nursing,
Madurai.
- 5) **Prof.Dr.Arun Vijaya Paul,**
Associate Professor,
Department of Community Medicine,
Coimbatore Medical College,
Coimbatore.

APPENDIX - D
CERTIFICATE FOR VALIDITY

This is to certify that the observation checklist and rating scale on
**"A Study to assess the effectiveness of home based steam inhalation
therapy on reducing the symptoms of acute upper respiratory tract
infections among under five children in Nanchiyampalayam at
Dharapuram"** has been validated by me and found appropriate with
mentioned suggestions.

Signature :

[Handwritten Signature]
26/5/10

Name :

M. AMUDHA, M.Sc.N.

Designation :

*ASSO. PROFESSOR
HOD, CHN Department*

College :

*Dharmavathi College of
Nursing, Erode.*

CERTIFICATE FOR VALIDITY

This is to certify that the observation checklist and rating scale on **"A Study to assess the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infections among under five children in Nanchiyampalayam at Dharapuram"** has been validated by me and found appropriate with mentioned suggestions.

Signature : 

Name : K ANDASAMY M.

Designation : Assoc. Prof / HOD.

College : Sri Gokulam College of Nursing, Salem.

CERTIFICATE FOR VALIDITY

This is to certify that the observation checklist and rating scale on "A Study to assess the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infections among under five children in Nanchiyampalayam at Dharapuram" has been validated by me and found appropriate with mentioned suggestions.

Signature : 

Name : ASSISTANT PROFESSOR OF S.D.M.,
Department of Community Medicine,
Coimbatore Medical College,
Coimbatore-641 014

Designation : ASSISTANT PROFESSOR OF S.D.M.,
Department of Community Medicine,
Coimbatore Medical College,
Coimbatore-641 014

College : Coimbatore Medical College

CERTIFICATE FOR VALIDITY

This is to certify that the observation checklist and rating scale on
**"A Study to assess the effectiveness of home based steam inhalation
therapy on reducing the symptoms of acute upper respiratory tract
infections among under five children in Nanchiyampalayam at
Dharapuram"** has been validated by me and found appropriate with
mentioned suggestions.

Prof. Sivagami Ramanathan
M.Sc. (Nursing)
HOD / Community Health Nursing
KMCH College of Nursing, Coe-14

Signature : *Rm. Sivagami*

Name : *Rm. SIVAGAMI*

Designation : *HOD / PROFESSOR*

College : *KMCH COLLEGE
OF NURSING
COIMBATORE.*

CERTIFICATE FOR VALIDITY

This is to certify that the observation checklist and rating scale on
**"A Study to assess the effectiveness of home based steam inhalation
therapy on reducing the symptoms of acute upper respiratory tract
infections among under five children in Nanchiyampalayam at
Dharapuram"** has been validated by me and found appropriate with
mentioned suggestions.

Signature : 

Name : Y. John Sam Ann B.A.S.
M.Sc. & Ph.D

Designation : READER

College : C.S.S. Jeyaraj Annapuri
College Of Nursing,
Panumalei
Madurai.

APPENDIX – E

CERTIFICATE OF ENGLISH EDITING

TO WHOM SOEVER IT MAY CONCERN

This is to certify that the dissertation work, "A Study to assess the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infections among under five children in Nanchiyampalayam at Dharapuram" done by Ms. A. Lydia Jasmine, II Year M.Sc (Nursing) student of Bishop's College of Nursing, Dharapuram is edited for English Language appropriateness by Mr.P.Sampath, M.A., M.Ed.

Date : 12.01.11

Address :


Signature

P.SAMPATH

P. SAMPATH, M.A., M.Phil., M.Ed.,
Lecturer in English,
Maharani Teacher Training Institute,
Dharapuram.

APPENDIX – F

CERTIFICATE OF TAMIL EDITING

TO WHOM SOEVERY IT MAY CONCERN

This is to certify that the dissertation work, "A study to assess the effectiveness of home based steam inhalation therapy on reducing the symptoms of acute upper respiratory tract infections among under five children in Narchjampalayam at Dharapuram", done by Ms.A.Lydia Jasmine, II Year M.Sc.(Nursing) student of Bishop's College of Nursing, Dharapuram is edited for Tamil Language appropriateness by Mr.D.M.Senthil Kumar; M.A., B.Ed.

Date :

Address :

செந்தில் குமார்

Signature,

(செந்தில் குமார்)

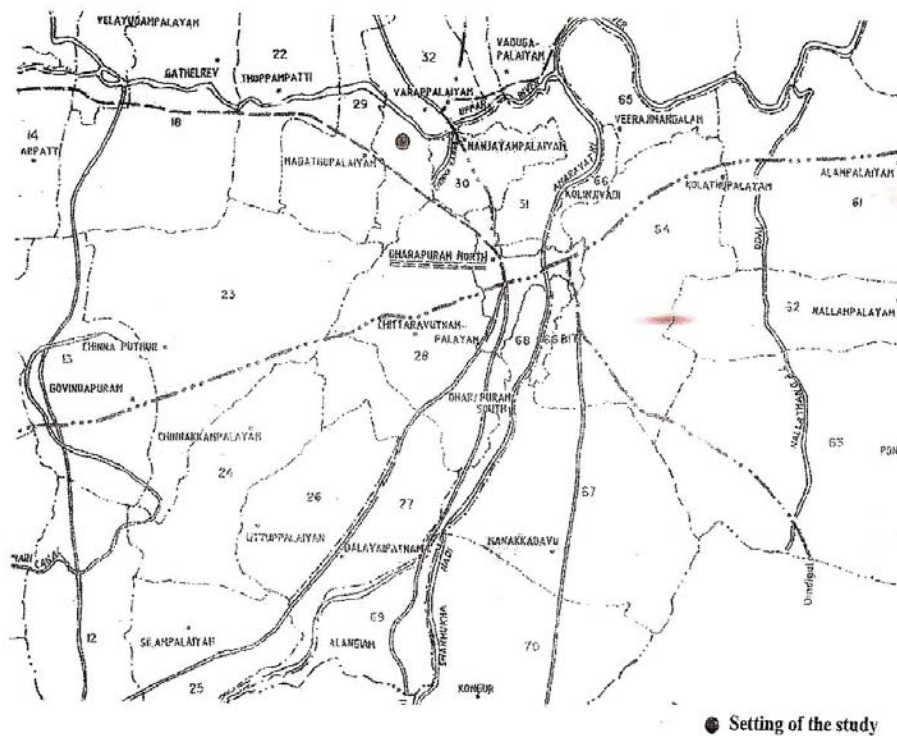
D.M.SENTHIL KUMAR, M.A., B.Ed., M.P.M.

Guest Lecturer.

**Department of Tamil,
Alagappa University Study Centre,
DHARAPURAM - 638656.**

APPENDIX – G

NANCHIYAMPALAYAM AREA MAP



APPENDIX – H

TOOLS

PART -I

DEMOGRAPHIC VARIABLES

Sample No:

Date : -----

- | | |
|------------------------------------------------------------|----------------------|
| 1. Age | <input type="text"/> |
| a) 2-3 years | |
| b) 3-4years | |
| c) 4-5years | |
| 2. Sex | <input type="text"/> |
| a) Male | |
| b) Female | |
| 3. Mode of delivery | <input type="text"/> |
| a) Normal vaginal delivery | |
| b) Caesarean section | |
| 4. Type of family | <input type="text"/> |
| a) Nuclear | |
| b) Joint | |
| 5. Monthly income of the family | <input type="text"/> |
| a) Below Rs. 1000 | |
| b) Rs. 1001- Rs.2000 | |
| c) Rs.2001- Rs.5000 | |
| d) Rs.5001 and above | |
| 6. Past history of acute upper respiratory tract infection | <input type="text"/> |
| a) Recurrent | |
| b) Rarely | |
| c) Occasionally | |

PART -II

OBSERVATIONAL CHECKLIST

I	SIGNS	PRESENT (1)	ABSENT (0)
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14.	Rhinnorrhoea Cough Fever Restlessness Irritable cry Malaise Oedema of soft palate Nasal congestion Bad odour Dehydrated Warm skin Dyspnoea Stridor Sneezing		

II	SYMPTOMS	PRESENT (1)	ABSENT (0)
15. 16. 17. 18. 19. 20.	Nasal obstruction Ear ache Vomiting Hoarseness of voice Dysphagia Constipation		

SCORING PROCEDURE

Mild = 0 - 7
Moderate = 8 - 14
Severe = 15 - 20

PART -III

RATING SCALE TO ASSESS THE SYMPTOMS OF ACUTE UPPER RESPIRATORY TRACT INFECTION

S. No	Items	Never (0)	Occasionally (1)	Rarely (2)	Always (3)
1	Is your child active and playing?				
2*	Is he/she getting up in-between sleep often than before?				
3	Is he/she able to sleep in lying position?				
4	Is he/she able to eat as usual?				
5*	Is he/she taking only fluids?				
6	Is he/she able to take solid foods?				
7*	Is he/she wants you to carry him/her all the time?				
8*	Is your child looking tired?				
9*	Is your child's skin warm to touch?				
10*	Is your child crying often than before?				

SCORING PROCEDURE:

Mild symptoms of AURI = 0 -10

Moderate symptoms of AURI = 11 -20

Severe symptoms of AURI = 21-30

Ra Fwpg;gpl
tiuaWf;fg;gl;l Neh;fhzy; ml;ltiz
gFjp- m
rKjha FLk;g fhuzpfs;

khjphp vz; :

Njpp :

1. taJ

m. 2-3 taJ

M. 3-4 taJ

,. 4-5 taJ

2. ghypdk;

m) Mz;

M) ngz;

3. Foe;ijapd; gpwg;G Kiw

m) Rf gpurtk;

M) mWit rpfpr;ir Kiw

4. FLk;g tpjk;

m. jdpf;FLk;gk;

M. \$l;Lf;FLk;gk;

5. khj FLk;g tUkhdk;

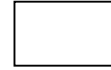
m. &. 1000f;Fk; Fiwthf

M. &. 10001- &.2000

,. &. 2001- &. 5000

<. &.5001f;Fk; Nky;

6. Rthrkz;ly Neha; ,jw;F Kd; te;Js;sjh?



m) njhlh;r;rpahf

M) mG+h;tkhf

,) vg;NghOjhtJ

OBSERVATIONAL CHECKLIST

PART - II

I	SIGNS	PRESENT (1)	ABSENT (0)
1.	Rhinnorrhoea		
2.	Cough		
3.	Fever		
4.	Restlessness		
5.	Irritable cry		
6.	Malaise		
7.	Oedema of soft palate		
8.	Nasal congestion		
9.	Bad odour		
10.	Dehydrated		
11.	Warm skin		
12.	Dyspnoea		
13.	Stridor		
14.	Sneezing		

II	mwpFwpfs;	Mk; (1)	,y;iy (0)
15.	%f;filg;G		
16.	fhJ typ		
17.	the;jp		
18.	njhz;il fufug;G		
19.	czT KOq;Ftjpy; f\;lk;		
20.	kyk; fopg;gipy; f\;lk;		

Mild AURI = 0 - 7

Moderate AURI = 8 - 14

Severe AURI = 15 - 20

tiuaWf;fg;gl;l Neh;fhzy;

gFjp - ,

t. vz;	nghUs;	xUNghJk; ,y;iy (3)	vg;NghjhtJ (2)	mG+h;tkhf (1)	vg;NghOJk; (0)
1.	cq;fsJ Foe;ij RWRWg;ghf tpisahLfpwjh?				
2. *	cq;fsJ Foe;ij Kd;ig tp;l J}f;fj;jpypUe;J mbfb vOe;jpUf;fpwjh?				
3	cq;fsJ Foe;ij gLj;j epiyapy; cwq;Ffpwjh?				
4	cq;fsJ Foe;ij Kd;igg; Nghy; cz;Zfpwjh?				
5 *	cq;fsJ Foe;ij jz;zPh; Mfhuk; kl;Lk; mUe;Jfpwjh?				
6	cq;fsJ Foe;ijahy; jpl czit cz;z Kbfpwjh?				
7 *	cq;fsJ Foe;ij vg;NghOJk; J}f;fpitj;Jf; nfhs;s tpUk;Gfpwjh?				
8 *	cq;fsJ Foe;ij Nrhh;thf cs;sjh?				
9 *	cq;fs; Foe;ijapd; rUkk; njhl;L ghh;f;Fk; NghJ ntJntg;ghf ,Uf;fpwjh?				
10 *	cq;fsJ Foe;ij Kd;ig tpl mjpfkfhf mOfpwjh?				

Mild AURI = 0 - 10

Moderate AURI = 11 - 20

Severe AURI = 21 - 30

APPENDIX - I

PROCEDURE FOR PRACTICING HOME BASED STEAM INHALATION THERAPY

ARTICLES**PURPOSES**

A bowl	-	To pour hot water.
Face towel	-	To wipe the face
Blanket or bed sheet	-	To put over the patients head and the bowl to prevent the loss of steam.

PROCEDURE:

- Explain the procedure to the mother to win her confidence and co- operation.
- Make sure that the mother and the child understand the procedure.
- Advice to empty the bowel or bladder to avoid disturbance during procedure.
- Pour hot water into a bowl and close the bowl with a lid.
- Make the child to sit on the lap of mother.
- Instruct the mother to hold the child's body away from hot bowl.
- Place the head of the child about 12 inches (30 cm) above the bowl.
- Open the lid.
- Cover the head of the child and mother with a blanket or bed sheet in such a way that the sides are totally closed and form a tent over the bowl.
- Keep the eyes shut and breathe deeply through the nose for 1 to 2 minutes.
- If the treatment is too heavy raise the blanket or bed sheet so that fresh air is brought in to the area and breath through the mouth a couple of times and then resume the treatment.
- Any uncomfortable is felt discontinue the treatment at any time.

- As Mucus loosens from steaming, clear the sinuses by gently blowing the nose into the hand towel or kerchief and discard them.
- 10 minutes is the maximum for inhaling steam for 1 – 12 months of age children 15 – 20 minutes is the maximum for inhaling steam for 1 – 5 years of age children. And for adults maximum for inhaling steam is half an hour in the morning and evening.
- Wipe the face, neck properly using hand towel.
- Make the child to remain in to the fowler's position or at rest for 1 – 2 hours after inhalation.
- Replace the articles.
- Observe for the present signs and symptoms after steam inhalation using the observational checklist of clinical features.

Trained Nurses Association of India.,(2005)

APPENDIX – J

PHOTOS





